DSC-F55/F55E

SERVICE MANUAL

Self Diagnosis Supported model

Ver 1.0 1999. 04

Cyber-shot Digital Still Camera

InfoLITHIUM S

MEMORY STICK

Photo : DSC-F55E

US Model
Canadian Model
Tourist Model
DSC-F55
E Model
DSC-F55/F55E
AEP Model
UK Model
Australian Model
Hong Kong Model
Chinese Model
DSC-F55E

SPECIFICATIONS

System
Recording format
Digital (JPEG based)/Field recording
Video signal
NTSC color, EIA standards (DSC-F55)
PAL colour CCIR standards (DSC-F55E)
Image device
1/2-inch CCD (total number of square pixels: 1636 × 1236), square grid, primary color filter, Interlace format
Lens
f = 6.85 mm (37 mm, when converted into a 35 mm still camera)
(0.5 m – ∞)
Macro (0.1 m – ∞)
F = 2.8
Photometric system
TTL system
Exposure control
Automatic exposure
White balance
Automatic, Indoor, Outdoor, Hold
Data compression system
Movie: MPEG-1
Still: JPEG
Audio (with still image): MPEG AUDIO (Monaural)
Data format
Still: 1600 × 1200, 1024 × 768, 640 × 480
Movie: 320 × 240, 160 × 112
E-mail: 320 × 240

Memory
Memory Stick
Flash
Recording distance limitations: 11 7/8 inches to 8 1/3 feet (0.3 m to 2.5 m), automatic flash control system
Shutter speed
Automatic (1/30 - 1/1000) (DSC-F55)
Automatic (1/25 - 1/1000) (DSC-F55E)

LCD screen
Screen size
2 inches (559 wide × 220 long)
LCD panel
TFT
Total dot number
122,980 dots

Input and output connectors
A/V OUT (Monaural)
Minijack
Video: 1Vp-p, 75 ohms, unbalanced, sync negative
Audio: monaural, 327 mV (at output, impedance more than 47 kilohms)
Output impedance with less than 2.2 kilohms
Digital I/O
Minijack
RS-232C based, 9.6 Kbps to 115.2 Kbps

General
Power consumption
Using the AC power adaptor/charger:
Recording: 3.6 W
Playback: 3.1 W
Using the rechargeable NP-F10 lithium ion battery:
Recording: 3.3 W
Playback: 2.7 W
Operation temperature
32°F to 104°F (0°C to 40°C)
Storage temperature
–4°F to +140°F (–20°C to +60°C)
Dimensions
Approx. 4 1/8 × 3 1/8 × 1 15/16 in. (103 × 79.1 × 48 mm) (w/h/d)
Mass
Approx. 9 oz (250 g) (excluding batteries)
Approx.1 lb 11 oz (300 g) (including batteries, Memory Stick, and Lens cap etc.)

AC-VF10 AC power adaptor/charger
Power requirements
100 to 240 V AC, 50/60 Hz
Power consumption
13 W
Output voltage
DC OUT: 4.2 V, 1.8 A in operating mode
Battery charge terminal: 4.2 V, 1.5 A in charge mode
Operation temperature
32°F to 104°F (0°C to 40°C)
Storage temperature
–4°F to +140°F (–20°C to +60°C)
Dimensions
Approx. 1 15/16 × 1 9/16 × 3 3/8 in.
(49 × 39 × 85 mm) (w/h/d)
Mass
Approx. 4.2 oz (120 g) (excluding batteries)

NP-F10 battery pack
Voltage
DC 3.6 V
Capacity
3.6 Wh
Type
Lithium ion type

Design and specifications are subject to change without notice.

DIGITAL STILL CAMERA

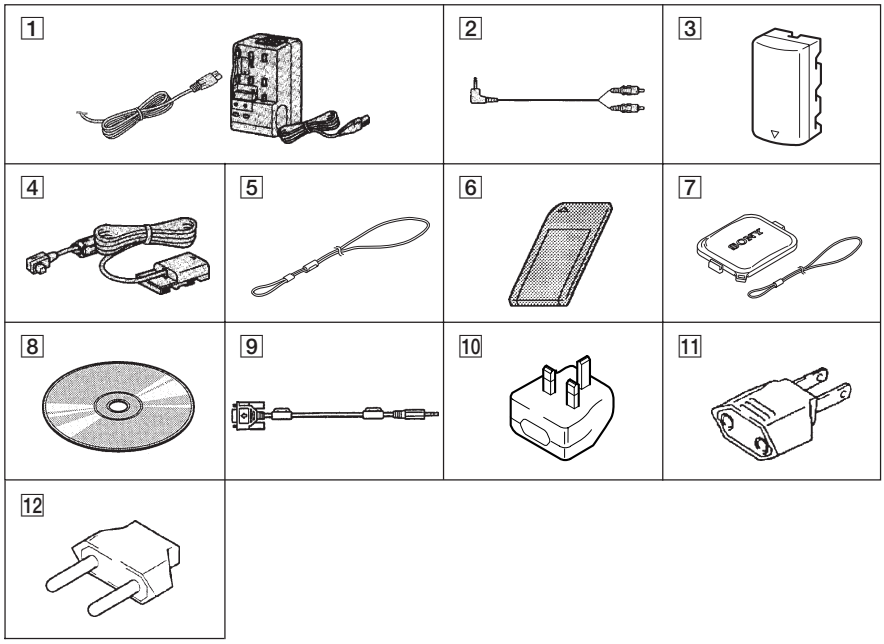
MICROFILM

SONY®

Table for differences of function

Model	DSC-F55	DSC-F55E
Destination	US, Canadian, Tourist, E	AEP, UK, Australian, Hong Kong, Chinese, E
Video signal	NTSC	PAL
Shutter speed	Automatic (1/30 – 1/10000)	Automatic (1/25 – 1/10000)

Supplied accessories



1 **AC-VF10 AC power adaptor/charger, Power cord** (1)

2 **A/V connecting cable** (1)

3 **NP-F10 Battery pack** (1)

4 **DK-115 connecting cord** (1)

5 **Hand strap** (1)

6 **Memory Stick (4MB)** (1)

7 **Lens cap/Lens cap strap** (1)

8 **Sony Picture Gear 3.2Lite** (1)
(Compact Disk)

9 **PC serial cable** (1)

10 **Conversion plug 3P adaptor** (1)
UK, Hong Kong model

11 **2-pin conversion adaptor** (1)
E model

12 **2-pin conversion adaptor** (1)
Tourist model

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

TABLE OF CONTENTS

SERVICE NOTE ····· 4-1

1. GENERAL

Parts identification ····· 1-1
Preparation ····· 1-1
1 Charging the battery pack ····· 1-1
2 Installing the battery pack ····· 1-2
3 Inserting a Memory Stick ····· 1-2
4 Setting the date and time ····· 1-2
Recording ····· 1-3
1 Recording still images ····· 1-3
2 Recording moving images ····· 1-3
Playing back ····· 1-3
1 Playing back still images ····· 1-3
2 Playing back moving images ····· 1-4
3 Viewing images using a personal computer ····· 1-4
Various ways of recording ····· 1-5
Changing the lens orientation – Face to face recording ····· 1-5
Using the self-timer ····· 1-5
Selecting brightness of the flash (FLASH LEVEL) ····· 1-5
Recording images in macro ····· 1-5
Recording enlarged images – Zoom recording ····· 1-6
Enjoying Picture Effect ····· 1-6
Selecting image quality (QUALITY) ····· 1-6
Selecting image size ····· 1-6
Selecting recording mode (REC MODE) ····· 1-6
Adjusting exposure (EXPOSURE) ····· 1-7
Adjusting the white balance ····· 1-7
Various ways of playback ····· 1-7
Playing back multiple images at a time (INDEX) ····· 1-7
Enlarging a part of the image – Zoom and trimming ····· 1-8
Rotating image (ROTATE) ····· 1-8
Playing back images in a continuous loop (SLIDE SHOW) ····· 1-8
Preventing accidental erasure (PROTECT) ····· 1-8
Deleting images (DELETE) ····· 1-9
Formatting (initializing) a Memory Stick ····· 1-9
Changing the menu setting ····· 1-9
Changing the menu setting ····· 1-9
Setting the mode of each item ····· 1-10
Using image data with other equipment ····· 1-10
Using the house current (mains) ····· 1-10
Watching images on a TV screen ····· 1-10
Printing the recorded images ····· 1-11
Marking a print mark on an image ····· 1-11
Additional information ····· 1-11
Precautions ····· 1-11
Troubleshooting ····· 1-12
Self-diagnosis display ····· 1-12
Warning and notice messages ····· 1-12

2. DISASSEMBLY

2-1. Cabinet (front) Assembly and Check Cover ····· 2-1
2-2. DD-126 Board ····· 2-2
2-3. Lens Cabinet Assembly ····· 2-2
2-4. Lens Assembly, Microphone, Flash Unit ····· 2-3
2-5. MM-39, SY-54 Boards ····· 2-4
2-6. Control Switch Block (MS)/(HF) ····· 2-4
2-7. LCD Panel Block ····· 2-5
2-8. Circuit Boards Location ····· 2-6
2-9. Flexible Boards Location ····· 2-6

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram ····· 3-1
3-2. Camera/Memory Stick Block Diagram (1) ····· 3-4
3-3. Camera/Memory Stick Block Diagram (2) ····· 3-7
3-4. Mode Control Block Diagram ····· 3-11
3-5. LCD Block Diagram ····· 3-13
3-6. Power Block Diagram ····· 3-16

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. Frame Schematic Diagram ····· 4-1
4-2. Printed Wiring Boards and Schematic Diagrams ····· 4-4
• DD-224 (CCD Imager)
Printed Wiring Board and
Schematic Diagram ····· 4-5
• SY-54 (Camera)(1/10)
Schematic Diagram ····· 4-7
• SY-54 (Camera DSP)(2/10)
Schematic Diagram ····· 4-10
• SY-54 (LCD Drive)(3/10)
Schematic Diagram ····· 4-13
• SY-54 (Timing Generator)(4/10)
Schematic Diagram ····· 4-16
• SY-54 (VIDEO)(5/10)
Schematic Diagram ····· 4-19
• SY-54 (SH DSP)(6/10)
Schematic Diagram ····· 4-22
• SY-54 (Serial I/O)(7/10)
Schematic Diagram ····· 4-25
• SY-54 (Audio)(8/10)
Schematic Diagram ····· 4-27
• SY-54 (Lens Motor Drive)(9/10)
Schematic Diagram ····· 4-29
• Control Switch Block (MS/HF)
Schematic Diagram ····· 4-31
• SY-54 (HI Control)(10/10)
Schematic Diagram ····· 4-34
• SY-54 (Camera, Camera DSP, LCD Drive, Timing Generator, Video, SH DSP, Serial I/O, Audio, Lens Motor Drive, HI Control)
Printed Wiring Board ····· 4-37
• VL-27 (Back Up Battery)
Printed Wiring Board and
Schematic Diagram ····· 4-42
• MM-39 (Memory)
Printed Wiring Board ····· 4-43
• MM-39 (Memory)
Schematic Diagram ····· 4-45
• DD-126 (DC-DC Converter)
Printed Wiring Board ····· 4-49
• DD-126 (DC-DC Converter)
Schematic Diagram ····· 4-51

5. ADJUSTMENTS

Before starting adjustment ····· 5-1
Adjusting items when replacing main parts and boards ····· 5-2
1. ADJUSTMENTS ····· 5-3
1-1. Preparations before Adjustment ····· 5-3
1-1-1. List of Service Tools ····· 5-3
1-1-2. Preparations ····· 5-3
1-1-3. Discharging of the strobe power supply ····· 5-4
1-1-4. Precaution ····· 5-4
1. Setting the Switch ····· 5-4
2. Order of Adjustments ····· 5-4
3. Subjects ····· 5-5
1-2. Initialization of B, D, E, F Page Data ····· 5-7
1-2-1. Initialization of D Page Data ····· 5-7
Initializing the D Page Data ····· 5-8
2. Modification of D Page Data ····· 5-8
3. D Page Table ····· 5-9
1-2-2. Initializing the B, E, F Page Data ····· 5-10
1. Initializing the B, E, F Page Data ····· 5-10
2. Modification of B, E, F Page Data ····· 5-10
3. F Page Table ····· 5-11
4. E Page Table ····· 5-13
5. B Page Table ····· 5-16

1-3. Video System Adjustments ····· 5-18
1. Video Sync Level Adjustment (SY-54 board) ····· 5-18
2. Video Burst Level Adjustment (SY-54 board) ····· 5-18
3. Video Y Level Check (SY-54 board) ····· 5-18
1-4. Camera System Adjustments ····· 5-19
1. HALL Adjustment ····· 5-19
2. Flange Back Adjustment (Using Minipattern Box) ····· 5-20
3. Flange Back Adjustment
(Using Flange Back Adjustment Chart) ····· 5-21
4. Flange Back Check ····· 5-21
5. Picture Frame Setting ····· 5-22
6. F No. Standard Data Input ····· 5-22
7. Mechanical Shutter Adjustment ····· 5-22
8. Light Level Adjustment ····· 5-23
9. Auto White Balance Standard Data Input ····· 5-23
10. Auto White Balance Adjustment ····· 5-24
11. Color Reproduction Adjustment ····· 5-25
11-1. Color Reproduction Adjustment ····· 5-25
11-2. Color Reproduction Check ····· 5-25
11-3. Processing after Completing Adjustments ····· 5-25
12. White Balance Check ····· 5-26
13. Strobe White Balance Adjustment ····· 5-26
14. Strobe Light Level and White Balance Check ····· 5-27
15. CCD Defect Compensation ····· 5-27
16. CCD Defect Compensation Check ····· 5-28
1-5. LCD System Adjustment ····· 5-29
1. LCD Initial Data Input ····· 5-29
2. VCO Adjustment (SY-54 board) ····· 5-30
3. D Range Adjustment (SY-54 board) ····· 5-30
4. Bright Adjustment (SY-54 board) ····· 5-31
5. Contrast Adjustment (SY-54 board) ····· 5-31
6. Color Adjustment (SY-54 board) ····· 5-32
7. V-COM Level Adjustment (SY-54 board) ····· 5-32
8. V-COM Adjustment (SY-54 board) ····· 5-33
9. White Balance Adjustment (SY-54 board) ····· 5-33
1-6. System Control System Adjustment ····· 5-34
1. Battery End Adjustment (SY-54 board) ····· 5-34
5-2. SERVICE MODE ····· 5-35
2-1. Adjustment Remote Commander ····· 5-35
1. Using the Adjustment Remote Commander ····· 5-35
2. Precautions Upon Using the Adjustment Remote
Commander ····· 5-35
2-2. Data Process ····· 5-36
2-3. Service Mode ····· 5-37
1. Setting the Test Mode ····· 5-37
2. Bit Value Discrimination ····· 5-37
3. Switch Check (1) ····· 5-38
4. Switch Check (2) ····· 5-38
5. LED Check ····· 5-38

6. REPAIR PARTS LIST

6-1. Exploded Views ····· 6-1
6-1-1. Overall Section ····· 6-1
6-1-2. Cabinet (front) Section ····· 6-2
6-1-3. Camera Block Section ····· 6-3
6-1-4. Cabinet (rear) Section ····· 6-4
6-2. Electrical Parts List ····· 6-5

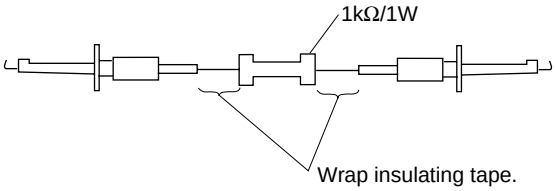
* The color reproduction frame is shown on page 153.

[Discharging of the FLASH unit's charging capacitor]

The charging capacitor of the FLASH unit is charged up to the maximum 300 V potential.
There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the DSC-F55/F55E is simply turned off. Therefore, the remaining voltage must be discharged as described below.

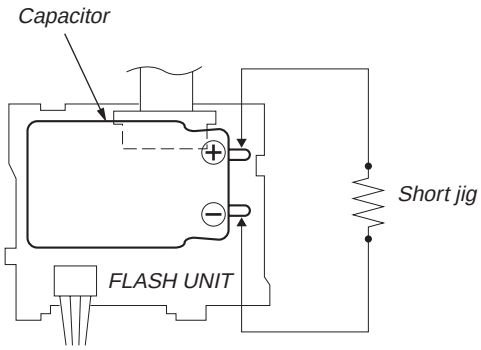
Preparing the Short Jig

To preparing the short jig. a small clip is attached to each end of a resistor of 1kΩ /1W (1-215-869-11)
Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



Discharging the Capacitor

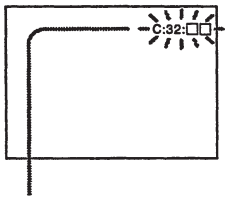
Short circuits between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



[Description on Self-diagnosis Display]

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

- C: □□: □□
  The contents which can be handled by customer, are displayed.
- E: □□: □□
  The contents which can be handled by engineer, are displayed.

Note : The "Self-diagnosis" data is backed up by the coin lithium battery.The data will be lost and initialized when the coin lithium battery is removed.

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:01	Turn off the main power then back on.	Trouble with hardware.	SYSTEM ERROR
C:13:01	Replace the memory stick. Format the memory stick with the DSC-F55/F55E.	• The type of memory stick that cannot be used by this machine, is inserted. • Data is damaged. • Unformatted memory stick is inserted.	MS ERROR
E:91:01	Checking of flash unit or replacement of flash unit	Abnormality when flash is being charged.	Flash LED Flash display Flashing at 3.2 Hz
E:61:00	Checking of lens drive circuit	When failed in the focus initialization.	—
E61:10			

Be sure to read the following before using your camera

LCD screen
The LCD screen is manufactured using high-precision technology. However, there may be some tiny black points and/or bright points (red, blue or green in color) that constantly appear on the LCD screen. These points are normal in the manufacturing process and do not affect the recorded image in any way. Over 99.99 % are operational for effective use.

Trial recording
Before you record one-time events, you may want to make a trial recording to make sure that the camera is working correctly.

No compensation for contents of the recording
Contents of the recording cannot be compensated for if recording or playback is not made due to a malfunction of the camera, etc.

Note on image data compatibility
Image data files recorded on Memory Sticks by your camera conform with the Design Rules for Camera File Systems universal standard established by the JEIDA (Japan Electronic Industry Development Association).
You cannot play back on your camera still images recorded on other equipment (DCR-TRV890E/TRV900/TRV900E, DSC-D700) that does not conform with this universal standard. (These models are not sold in some areas.)

Precaution on copyright
Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Before using your camera

This digital still camera uses a Memory Stick as a medium for recording images.

Do not shake or strike the unit
Malfunctions, inability to record images as well as inability to use Memory Sticks or image and memory data breakdown, damage or loss may occur.

Do not get the unit wet
When taking pictures outdoors in the rain or under similar conditions, be careful not to get the unit wet.
If moisture condensation occurs, refer to page 48 and follow instructions on how to remove it before using.

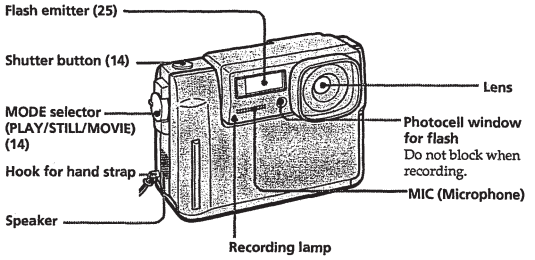
Back up recommendations
To avoid the potential risk of data loss always copy (back up) data to disk.

Supplied accessories
AC-VF10 AC power adaptor/charger (1)
A/V connecting cable (1)
NP-F10 Battery pack (1)
DK-115 DC connecting cable (1)
Hand strap (1)
Lens cap (1)
Lens cap strap (1)
Memory Stick (4 MB) (1)
PC serial cable (1)
Power cord (1)
Sony PictureGear 3.2 Lite (1)
Operating instructions (1)

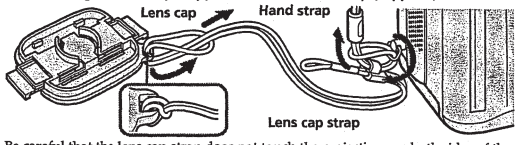
Your dealer may not handle some of the above listed accessories. Please ask the dealer for detailed information about the accessories in your country.

Parts identification

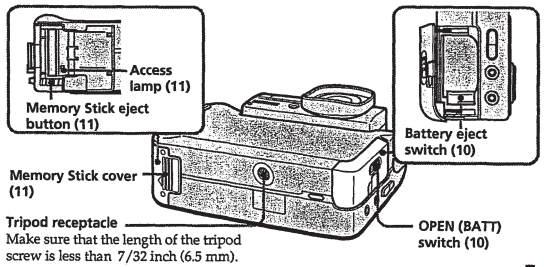
See pages in parentheses for more details.

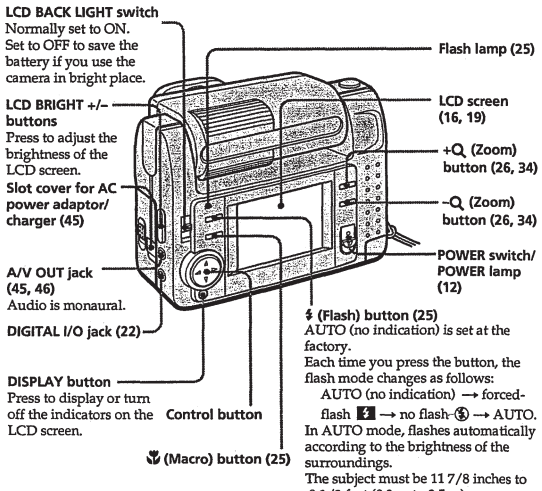


Attaching the lens cap (supplied) and the hand strap (supplied).

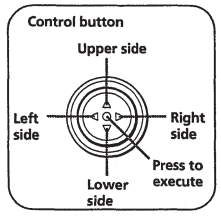


Be careful that the lens cap strap does not touch the projections on both sides of the lens cap hole.


Access lamp (11)
Memory Stick eject button (11)
Battery eject switch (10)
Memory Stick cover (11)
Tripod receptacle
Make sure that the length of the tripod screw is less than 7/32 inch (6.5 mm).
OPEN (BATT) switch (10)


LCD BACK LIGHT switch
Normally set to ON.
Set to OFF to save the battery if you use the camera in bright place.
LCD BRIGHT +/– buttons
Press to adjust the brightness of the LCD screen.
Slot cover for AC power adaptor/ charger (45)
A/V OUT jack (45, 46)
Audio is monaural.
DIGITAL I/O jack (22)
DISPLAY button
Press to display or turn off the indicators on the LCD screen.
Control button
(Macro) button (25)
Flash lamp (25)
LCD screen (16, 19)
+Q (Zoom) button (26, 34)
–Q (Zoom) button (26, 34)
POWER switch/ POWER lamp (12)

(Flash) button (25)
AUTO (no indication) is set at the factory.
Each time you press the button, the flash mode changes as follows:
AUTO (no indication) → forced-flash → no flash → AUTO.
In AUTO mode, flashes automatically according to the brightness of the surroundings.
The subject must be 11 7/8 inches to 8 1/3 feet (0.3 m to 2.5 m) away.

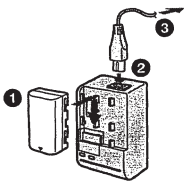


Function of the control button
You can execute the functions by pressing the upper, lower, left, or right side of the control button. When an item is selected in the menu, the color of the item changes from blue to yellow. To enter your selection, press the center of the control button.

Preparation

1 Charging the battery pack

To charge the battery pack, use the AC power adaptor/charger.
Your camera operates only with the "InfoLITHIUM" battery pack (S series).
"InfoLITHIUM" is a trademark of Sony Corporation.



❶ Insert the battery pack in the direction of the ▼ mark. Slide the battery pack in the direction of the arrow.

❷ Connect the power cord to the AC power adaptor/charger.

❸ Connect the power cord to a wall outlet.
The CHARGE lamp (orange) lights up when charging begins.
When the CHARGE lamp goes off, **normal charge** is completed. For **full charge**, which allows you to use the battery longer than usual, leave the battery pack attached for about one hour after normal charge is completed.

To remove the battery pack

Slide the battery pack in the opposite direction of the arrow as illustrated above.

Charging time

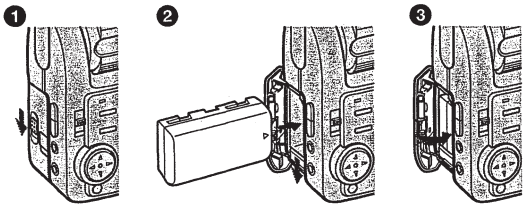
Battery	Full charge*	Normal charge**
NP-F10	145 min.	85 min.

Approximate minutes to charge a discharged battery pack using the AC power adaptor/charger AC-VF10. (Lower temperature require a longer charging time.)

* Charging for about one hour after the CHARGE lamp goes out.
** Charging just until the CHARGE lamp goes out.

What is "InfoLITHIUM"?
The "InfoLITHIUM" is a lithium ion battery pack which can exchange data such as battery consumption with compatible video equipment. This unit is compatible with the "InfoLITHIUM" battery pack (S series). Your camera operates only with the "InfoLITHIUM" battery. "InfoLITHIUM" battery packs have the mark.
"InfoLITHIUM" is a trademark of Sony Corporation.

2 Installing the battery pack



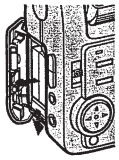
❶ Open the battery cover.
Open the cover while sliding the OPEN (BATT) switch in the direction of the arrow.

❷ Install the battery pack.
While sliding down the battery eject switch, insert the battery pack with the ▲ mark facing toward the battery compartment.

❸ Close the cover.
Press the cover until it clicks.

To remove the battery pack

Open the battery cover. Slide down the battery eject switch, and remove the battery pack.
Be careful not to drop the battery pack when removing.

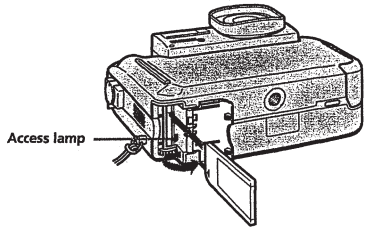


Battery remaining indicator
This camera shows on the LCD screen how many minutes you can still keep on recording or playing back images.

Auto power-off function
During recording if you leave the camera inactivate for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery.
Auto power-off does not function when you use the AC power adaptor/charger.

3 Inserting a Memory Stick

"Memory Stick" is a trademark of Sony Corporation.



❶ Open the Memory Stick cover.
Slide it in the direction of the arrow mark on the cover.

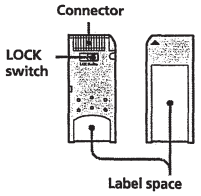
❷ Insert the Memory Stick.
Insert it with the ▲ mark pointing inward.

❸ Close the Memory Stick cover.

To remove the Memory Stick

Open the Memory Stick cover, then press the Memory Stick eject button.

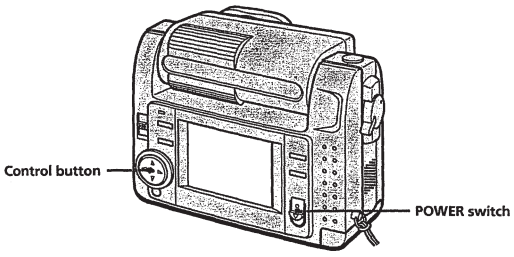
Note
When the access lamp lights up, be sure not to remove the Memory Stick or turn off the power.



Note on Memory Stick
You cannot record on a Memory Stick if the LOCK switch is set to LOCK position.

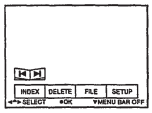
4 Setting the date and time

When you use the camera first, set the date and time. If they are not set, incorrect date and time are recorded, and CLOCK SET screen in the step 5 appears whenever you turn on the camera in STILL/MOVIE mode.

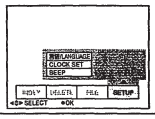


❶ Slide the POWER switch down to turn on the power.
The POWER lamp lights up.

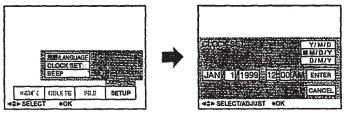
❷ Press ▲ of the control button.
The menu bar appears on the LCD screen.



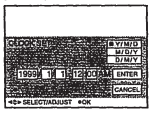
❸ Select "SETUP" with the control button, then press it.



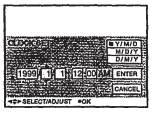
❹ Select "CLOCK SET" with the control button, then press it.



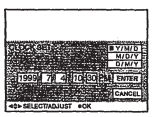
❺ Select the desired display of the date with the control button, then press it.
Y/M/D (year/month/day)
M/D/Y (month/day/year)
D/M/Y (day/month/year)



❻ Select the date and time with the control button, then press it.
The item to be changed is indicated with ▲/▼. Select number by pressing ▲/▼ of the control button, then press it to enter the number.
After entering the number, ▲/▼ moves to the next item.
When "D/M/Y" is selected, set the time on a 24-hour cycle.



❼ Select "ENTER" with the control button, then press it at the desired moment to begin clock movement.



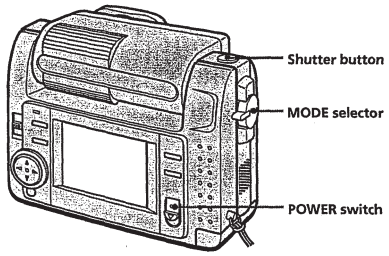
To cancel the date and time setting

Select "CANCEL" with the control button, then press it.

Recording

1 Recording still images

To record images, slide the POWER switch down to turn on the power (The POWER lamp lights up) and insert the Memory Stick.



❶ Set the MODE selector to STILL.

❷ Press the shutter button halfway down.
When AE (auto exposure), AWB (auto white balance) and AF (auto focus) are frozen, the AE lock indicator ● (green) lights up.

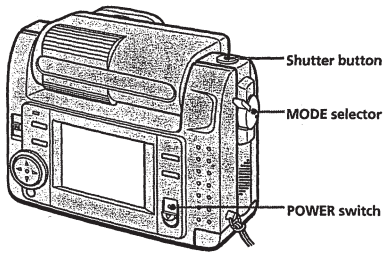
❸ Press the shutter button fully down.
The image is recorded on the Memory Stick.

Note
When the image is recorded on the Memory Stick, "RECORDING" appears on the LCD screen. When this indication appears, never shake or strike the unit. Also, do not turn the power off, or remove the battery pack or Memory Stick. Otherwise, an image data breakdown may occur and the Memory Stick may become unusable.

Do not hold the camera by the LCD screen.

2 Recording moving images

To record images, slide the POWER switch down to turn on the power (The POWER lamp lights up) and insert the Memory Stick.



❶ Set the MODE selector to MOVIE.

❷ Press the shutter button fully down momentarily.
The image and sound are recorded for five seconds, 10 seconds, or 15 seconds. (The time is set at "REC TIME SET" in the menu.) (page 43)

Hold the shutter button fully down.
The image and sound are recorded until you release it.
Video mail mode: maximum 60 seconds when recording 160 × 112 size 160
Presentation mode: maximum 15 seconds when recording 320 × 240 size 320

Moving images will be softer than still images.

Checking the last recorded image (Review)

When you want to check the last recorded image, press ◀ of the control button. The last recorded image is displayed on the LCD screen. To return to normal mode, press the shutter button or select "RETURN" with the control button, then press it.

The indicators during recording

The indicators on the LCD screen are not recorded.

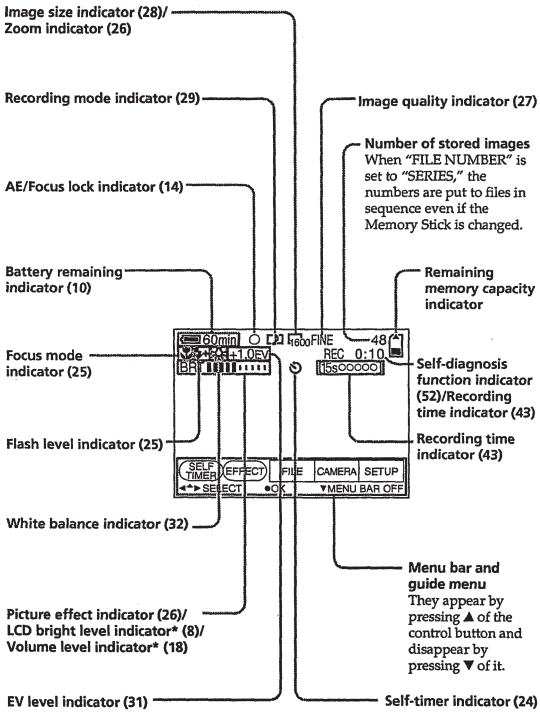


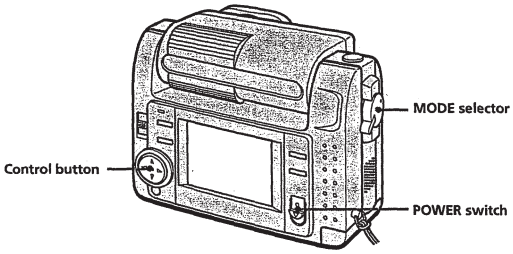
Image size indicator (28)/ Zoom indicator (26)
Recording mode indicator (29)
AE/Focus lock indicator (14)
Battery remaining indicator (10)
Focus mode indicator (25)
Flash level indicator (25)
White balance indicator (32)
Picture effect indicator (26)/ LCD bright level indicator* (8)/ Volume level indicator* (18)
EV level indicator (31)
Image quality indicator (27)
Number of stored images When "FILE NUMBER" is set to "SERIES," the numbers are put to files in sequence even if the Memory Stick is changed.
Remaining memory capacity indicator
Self-diagnosis function indicator (52)/Recording time indicator (43)
Recording time indicator (43)
Menu bar and guide menu They appear by pressing ▲ of the control button and disappear by pressing ▼ of it.
Self-timer indicator (24)
60min
+1.0EV
FINE
48
REC 0:10
15s
SELF TIMER
EFFECT
FILE
CAMERA
SETUP
SELECT
OK
MENU BAR OFF

* Only displayed during operation.

Playing back

1 Playing back still images

To play back images, slide the POWER switch down to turn on the power (The POWER lamp lights up) and insert the Memory Stick.



❶ Set the MODE selector to PLAY.
The last recorded image appears on the LCD screen.
"NO FILE" indicator appears on the LCD screen when there is no image.

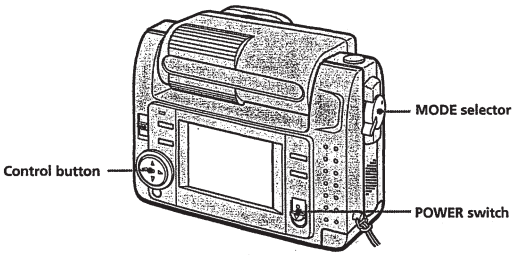
❷ Press ▲ of the control button to display the menu bar on the LCD screen.

❸ Select the recorded image with the control button.
Select the button on the LCD screen with the control button, then press it.
I◀: To display the preceding recorded image.
▶I: To display the next image.
INDEX: To display six recorded images at a time (INDEX screen).

When the menu bar is not displayed
You can directly select the image with ◀ or ▶ of the control button.

2 Playing back moving images

To play back moving images, slide the POWER switch down to turn on the power (The POWER lamp lights up) and insert the Memory Stick.



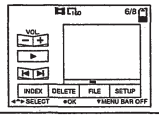
❶ Set the MODE selector to PLAY.

The last recorded image appears on the LCD screen.
The image recorded in MOVIE mode is displayed one-size smaller than the other normal-sized images.

❷ Press ▲ of the control button to display the menu bar on the LCD screen.

❸ Select the recorded moving image with the control button.

Select the button on the LCD screen with the control button, then press it.
I◀: To display the preceding recorded image.
▶I: To display the next image.
INDEX: To display six recorded images at a time (INDEX screen).



❹ Select the ▶ (playback) button on the screen with the control button, then press it.

Moving images and sound are played back.

Adjusting the volume

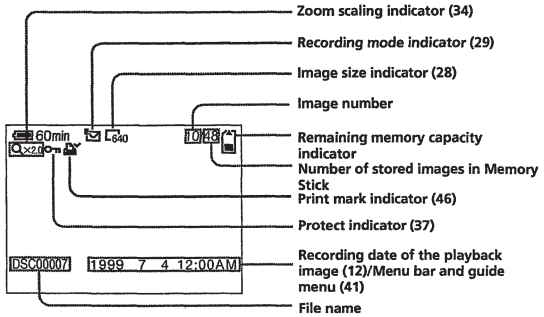
Select the VOL. +/– buttons on the screen with the control button, then adjust the volume with ◀ or ▶ of it.

When the menu bar is not displayed

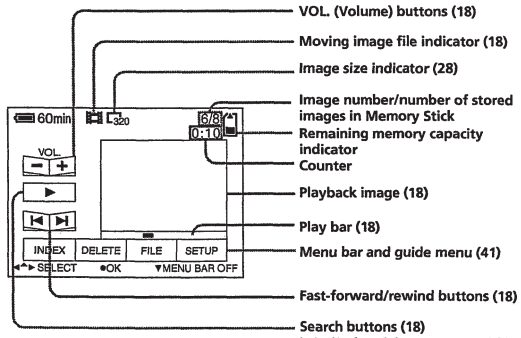
You can directly select the image with ◀ or ▶ of the control button, and play back the image with ● of it.

The indicators during playback

During playback still images (STILL)



During playback moving images (MOVIE)/still images with sounds (VOICE)



Battery life/the number of images that can be recorded/played back

STILL mode

Continuous recording

LCD BACK LIGHT	Battery life (min.)	Number of images (record/playback)
ON	50 (45)	1000 (900)
OFF	60 (55)	1200 (1100)

Continuous playing*

LCD BACK LIGHT	Battery life (min.)	Number of images (record/playback)
ON	65 (60)	1000 (900)
OFF	75 (70)	1200 (1100)

Approximate battery life and the number of images that can be recorded/played back at a temperature of 77°F (25°C), 1600 × 1200 image size, in NORMAL recording and STANDARD quality mode. Shooting without the flash. Numbers in parentheses indicate the time when you use a normally charged battery.
* Playing back single image at about 3-second intervals

MOVIE mode

Continuous recording

LCD BACK LIGHT	Battery life (min.)
ON	40 (35)
OFF	50 (45)

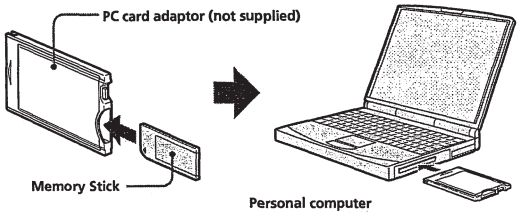
Approximate minutes that can be recorded at a temperature of 77°F (25°C) and 160 × 112 image size. Numbers in parentheses indicate the time when you use a normally charged battery.

- Battery life and the number of images will be decreased if you use the camera while you repeat turning the power on/off.
- The capacity of a Memory Stick is limited. The above figures are a guide when continuously recording/playing back while replacing Memory Sticks.
- The battery life will be shorter when you carry out recording in a cold place. When using the battery pack in a cold place, keep it warm by putting it into your pocket and install it in the camera just before recording.

3 Viewing images using a personal computer

With this camera, the still image data is compressed in JPEG format and moving image data is compressed with MPEG-1 format.
These data can be viewed using a personal computer which installed JPEG and MPEG browsing software as Sony PictureGear 3.2 Lite (supplied). For further information to use the browsing software, refer to the software and the personal computer instruction manual.

Using the optional PC card adaptor



Example: personal computer with Windows 95 installed

❶ Start up personal computer and insert the optional PC card adaptor (with the Memory Stick inside) into the PC card drive of your personal computer.

❷ Open "My computer" and double-click "PC card drive."

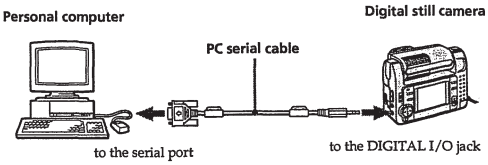
Double-click folders in the following order as described below:

Recording mode	STILL	MOVIE	VOICE	E-MAIL
Folder	① Dcim	① Mssony	① Mssony	① Mssony
	② 100msdcf	② Moml0001	② Momlv100	② Imcif100

❸ Double-click the desired data file.

Using the supplied accessories

You can send image data from the camera to an IBM PC/AT compatible PC (via the serial port), using the supplied PC serial cable and Sony PictureGear 3.2 Lite.



❶ Install the supplied application software Sony PictureGear 3.2 Lite into the personal computer.
For details, refer to the instruction manual of the Sony PictureGear 3.2 Lite.

❷ Connect one end of the PC serial cable to the DIGITAL I/O jack, and other end to the serial port of IBM PC/AT compatible PC.

❸ Turn on the power of the camera, and check that the PC serial cable is connected to the DIGITAL I/O jack of the camera. Set the MODE selector to PLAY.
"PC MODE" appears on the LCD screen, and the camera turns to standby for communication.

❹ Operate the personal computer to receive and use image file from the camera.
For details on the operation of the personal computer, refer to the instruction manual of personal computer and Sony PictureGear 3.2 Lite.

Notes
- While you are operating the personal computer, you cannot operate the camera.
- Before making connections, turn off each equipment. After connections are completed, turn on each equipment.
- When you use the camera with connecting to other equipment for a long time, use the AC power adaptor/charger.

Recommended OS/ applications example

OS
Windows 3.1
Windows 95 or later
Mac OS system 7.5 or later

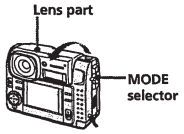
Applications
Sony PictureGear 3.2 Lite
Microsoft Internet Explorer 4.0
Netscape Navigator, etc.

Notes
- To play back an MPEG file, install Active Movie Player (Direct Show).
- For playing back a file recorded in MOVIE or VOICE mode, first copy it to the hard disk of the personal computer. If you play back the file from a Memory Stick, the picture and sound may break off.
- You cannot play back an MPEG file with Windows 3.1.
- For Macintosh, you can use the Memory Stick recorded with this camera using the PC Exchange with Mac OS system 7.5 or later. A viewing application for Macintosh is also necessary for viewing images. To play back an MPEG file, install Quick Time 3.2.
- For details on system requirements, refer to the operating instructions of your application software.
- Information on image rotating and face-to-face recording may not be sent to a personal computer.

▶Various ways of recording

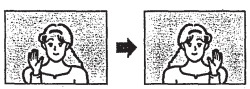
Changing the lens orientation – Face to face recording

You can shoot yourself by placing yourself and the LCD screen face to face.



1 Set the MODE selector to MOVIE or STILL.

2 Adjust the lens angle.
Rotate the lens part at about 180 degrees when face to face recording.

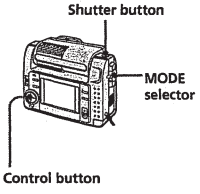


3 Start recording.

Note
The images displayed on the LCD screen are mirror images. But they are stored in Memory Stick in the same way as you see through the lens.

Using the self-timer

With the self-timer about 10 seconds after you press the shutter button, the subject is recorded.



1 Set the MODE selector to MOVIE or STILL.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

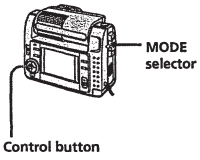
3 Select "SELFTIMER" with the control button, then press it.
Self-timer indicator (⏲) appears on the screen.

4 Press the shutter button halfway down.
The AE lock indicator (●) appears on the screen.

5 Press the shutter button fully.
The recording lamp and the self-timer indicator (⏲) flashes, then the shutter is released in about 10 seconds and the image is recorded.

Selecting brightness of the flash (FLASH LEVEL)

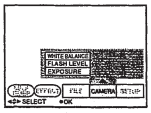
You can select brightness of the flash.



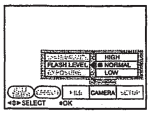
1 Set the MODE selector to STILL.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

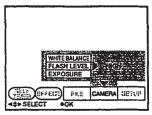
3 Select "CAMERA" with the control button, then press it.
The CAMERA menu appears on the screen.



4 Select "FLASH LEVEL" with the control button, then press it.



5 Select the brightness of flash with the control button.

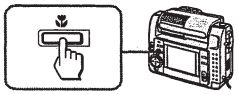


6 Press ▼ of the control button repeatedly.
The menu bar disappears from the screen.

Hints for setting the flash adjustment
When the subject or background is dark, the flash adjustment may become too high. In this case, set FLASH LEVEL to LOW (⚡–). On the other hand, when the subject or background is bright, the flash adjustment may become too low. In this case, set FLASH LEVEL to HIGH (⚡+). To set the flash level properly, we recommend you to do a trial recording.

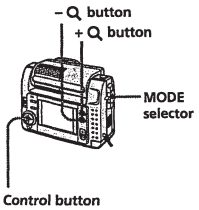
Recording images in macro

Press the 🌷 (macro) button. The macro indicator (🌷) appears on the LCD screen. You can shoot a subject that is about 4 inches (10 cm) away from the lens surface in macro mode.



If you press the 🌷 (macro) button again, macro mode is released and you can record images in normal mode.

Recording enlarged images – Zoom recording



1 Set the MODE selector to STILL.

2 Press the + Q button.
The image on the LCD screen is enlarged by 2.5 times.
The zoom indicator (6402) appears on the screen.

3 Press the shutter button fully.
The image is recorded at 640 × 480 size on a Memory Stick.

To return to the original size

Press the – Q button. The zoom indicator (6402) disappears from the screen.

Note

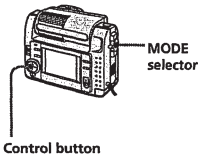
The image displayed on the screen is degraded than the one to be recorded on the Memory Stick.

On zoom scaling

Zoom scaling fixes by 2.5 times and the zoom indicator appears as (6402).

Enjoying Picture Effect

You can make pictures like those of television with the Picture Effect function.



1 Set the MODE selector to MOVIE or STILL.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "EFFECT" with the control button, then press it repeatedly until the desired picture effect is displayed.
- NEG. ART: The color and brightness of the picture is reversed.
- SEPIA: The picture is sepia.
- B&W: The picture is monochrome (black and white).
- SOLARIZE: The light intensity is more clear, and the picture looks like an illustration.

4 Press ▼ of the control button.
The menu bar disappears from the screen.

To cancel the picture effect

Select "EFFECT" in the step 3, then press the control button repeatedly until the picture effect indicator disappears.

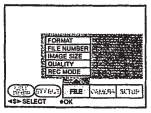
Selecting image quality (QUALITY)

You can select one of two available image quality modes. The number of images you can record is different depending on which image quality mode you select.

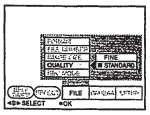
1 Set the MODE selector to STILL.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "FILE" with the control button, then press it.
The FILE menu appears on the screen.

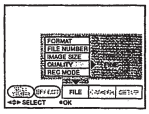


4 Select "QUALITY" with the control button, then press it.



- FINE (FINE): Use this mode when giving priority to image quality.
- STANDARD (STD): Use this mode as a standard image quality.

5 Select the image quality with the control button, then press it.



6 Press ▼ of the control button repeatedly.
The menu bar disappears from the screen.

What is the difference in the image quality mode?

An image is compressed in the JPEG format before recording. The memory capacity allocated to each image is different depending on the image quality.

Note

Depending on the image, changing the image quality may not affect the image appearance on the screen.

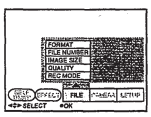
Selecting image size

You can change the image size according to your recording conditions.

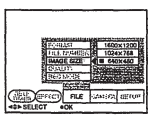
1 Set the MODE selector to MOVIE or STILL.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "FILE" with the control button, then press it.
The FILE menu appears on the screen.



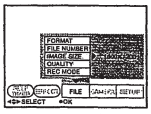
4 Select "IMAGE SIZE" with the control button, then press it.



Items for STILL mode
- 1600 × 1200: Records a 1600 × 1200 JPEG file.
- 1024 × 768: Records a 1024 × 768 JPEG file.
- 640 × 480: Records a 640 × 480 JPEG file.

Items for MOVIE mode
- 320 × 240: Records a 320 × 240 MPEG file.
- 160 × 112: Records a 160 × 112 MPEG file.

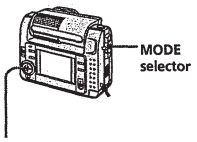
5 Select the desired image size with the control button, then press it.



6 Press ▼ of the control button repeatedly.
The menu bar disappears from the screen.

Selecting recording mode (REC MODE)

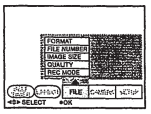
You can record a still image and sound together, or a still image which is suitable for e-mail transmission.



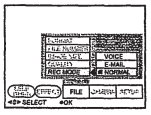
1 Set the MODE selector to STILL.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "FILE" with the control button, then press it.
The FILE menu appears on the screen.

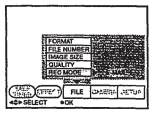


4 Select "REC MODE" with the control button, then press it.



- VOICE: Records a still image and sound together besides a JPEG file.
- E-MAIL: Records a 320 × 240 JPEG file besides a 1600 × 1200, 1024 × 768, or 640 × 480 JPEG file. E-mail files are suitable for e-mail transmission, etc. because they contain compressed data.
- NORMAL: Records a JPEG file in selected image size.

5 Select the desired recording mode with the control button, then press it.



6 Press ▼ of the control button repeatedly.
The menu bar disappears from the screen.

The MODE selector is set to "STILL"

Recording mode	Image size	Recording file	File name (ex.) Dsc	No. of images that can be recorded on a Memory Stick	
				STANDARD	FINE
NORMAL	1600 × 1200	JPEG (1600 × 1200)	00001.jpg	10 – 15	5 – 8
	1024 × 768	JPEG (1024 × 768)	00001.jpg	27 – 49	14 – 27
	640 × 480	JPEG (640 × 480)	00001.jpg	47 – 63	27 – 38
E-MAIL	1600 × 1200	JPEG (1600 × 1200) JPEG (320 × 240)	00001.jpg	10 – 14	5 – 8
	1024 × 768	JPEG (1024 × 768) JPEG (320 × 240)	00001.jpg	24 – 48	13 – 24
	640 × 480	JPEG (640 × 480) JPEG (320 × 240)	00001.jpg	38 – 48	24 – 32
VOICE	1600 × 1200	JPEG (1600 × 1200) MPEG audio with still image (320 × 240)	00001.jpg 00001.mpg	9 – 12	5 – 7
	1024 × 768	JPEG (1024 × 768) MPEG audio with still image (320 × 240)	00001.jpg 00001.mpg	19 – 27	11 – 19
	640 × 480	JPEG (640 × 480) MPEG audio with still image (320 × 240)	00001.jpg 00001.mpg	27 – 32	19 – 24

The MODE selector is set to "MOVIE"

Mode	Image size	Recording file	File name (ex.) Mov	Maximum recording time on a Memory Stick (sec.) *
Presentation	320 × 240	MPEG (320 × 240)	00001.mpg	40
Video mail	160 × 112	MPEG (160 × 112)	00001.mpg	160

* Continuous recording time

On directory
The directory of the file depending on the recording mode is as follows:
NORMAL: ¥Dcim¥100msdcf
E-MAIL: ¥Mssony¥Imcif100
VOICE: ¥Mssony¥Momlv100
Moving image: ¥Mssony¥Moml0001

Adjusting exposure (EXPOSURE)

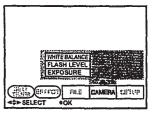
You can adjust the exposure according to your conditions.

When to use? The subject is too dark or bright against the background because of backlighting, a light source near by, etc.

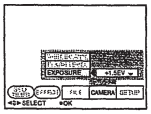
1 Set the MODE selector to MOVIE or STILL.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

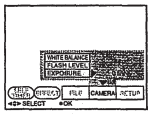
3 Select "CAMERA" with the control button, then press it.
The CAMERA menu appears on the screen.



4 Select "EXPOSURE" with the control button, then press it.



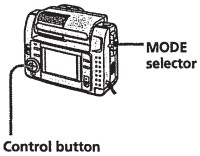
5 Select the desired exposure value with the control button, then press it.
You can select values ranging from – 1.5EV to + 1.5EV in steps of 0.5EV.



6 Press ▼ of the control button repeatedly.
The menu bar disappears from the screen.

Adjusting the white balance

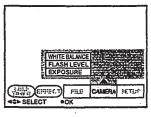
White balance adjustment allows more natural color balance for camera recording. Normally white balance is automatically adjusted.



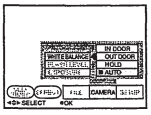
1 Set the MODE selector to MOVIE or STILL.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "CAMERA" with the control button, then press it.
The CAMERA menu appears on the screen.



4 Select "WHITE BALANCE" with the control button, then press it.



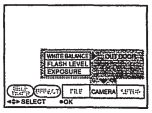
❒ IN DOOR (☼):
- Lighting condition changes quickly
- Too bright place such as photography studios
- Under sodium lamps or mercury lamps

❒ OUT DOOR (☀):
- Recording a sunset/sunrise, just after sunset, just before sunrise, neon signs, or fireworks
- Under a color matching fluorescent lamp

❒ HOLD (HOLD): Recording a single-colored subject or background

❒ AUTO: Adjusting the white balance automatically

5 Select the desired white balance mode with the control button, then press it.



6 Press ▼ of the control button repeatedly.
The menu bar disappears from the screen.

To return to automatic adjustment

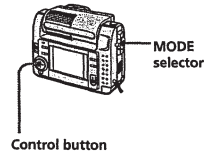
Select "AUTO" in the step 5 with the control button, then press it.

▶Various ways of playback

Playing back multiple images at a time (INDEX)

You can play back six recorded images at a time. You can also select a specific image from the six images and enlarge it to full-size.

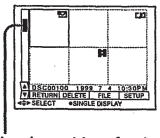
When to use? To search for an image you want from all the recorded images.



1 Set the MODE selector to PLAY.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "INDEX" with the control button, then press it.
Six images are displayed at a time (INDEX screen).



Showing the position of an image whose number is displayed

: Moving image file
: Still image with sound file
: E-mail mode file
: Print mark

To display the other six images

Select "▲/▼" at the lower left on the screen with the control button, then press ▲/▼ of the control button.

▲	Displays preceding six images
▼	Displays following six images

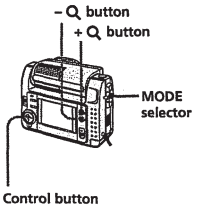
To return to the normal playback

- Select the desired image with the control button, then press it.
- Select "RETURN" with the control button, then press it.

Note
You cannot clear the menu bar in INDEX mode.

Enlarging a part of the image – Zoom and trimming

You can enlarge and display a part of the recorded image.



1 Set the MODE selector to PLAY.

2 Display the image to enlarge.

3 Zoom in/out the image by pressing the + Q or – Q button repeatedly.
The zoom scaling indicator (Q × 2.0) appears on the LCD screen.

4 Press the control button repeatedly to trim the image.
▲: Image moves downward
▼: Image moves upward
◄: Image moves rightward
►: Image moves leftward

To return to the normal size

Press the – Q button repeatedly, until the zoom scaling indicator (Q × 2.0) disappears from the screen, or simply press the control button.
The zoom scaling indicator (Q × 2.0) disappears from the screen.

To record an enlarged image (trimming)

①Enlarge the image.
②Press the shutter button. The image is recorded at 640 × 480 size.

Notes

- You cannot use this function on moving images.
- Zoom scaling is up to 5× regardless of the original size.
- The enlarged image is recorded at 640 × 480 size.

Rotating image (ROTATE)

You can rotate the playback picture. Information on the direction of the rotated image is written to the data file.

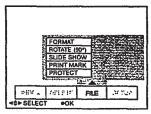
When to use? To play back vertical images recorded to horizontal images.

1 Set the MODE selector to PLAY.

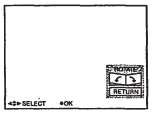
2 Display the image to rotate.

3 Press ▲ of the control button.
The menu bar appears on the LCD screen.

4 Select "FILE" with the control button, then press it.
The FILE menu appears on the screen.



5 Select "ROTATE (90°)" with the control button, then press it.



❒ ↷: Rotates the image clockwise by 90 degrees
❒ ↶: Rotates the image counter-clockwise by 90 degrees

6 Rotate the image, and select "RETURN" with the control button, then press it.

To return to the original image

Select ↷ or ↶ in the step 6 until the image returns to the original image. Select "RETURN" with the control button, then press it.

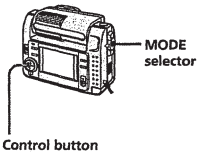
Notes

- The image recorded with other equipment may not be rotated.
- If the write protect tab on the Memory Stick is set to LOCK, or the image is protected, you cannot rotate the image.
- Information on image rotating may not be sent to a personal computer.

Playing back images in a continuous loop (SLIDE SHOW)

Plays back all recorded images in succession automatically.

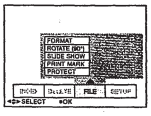
When to use? For a presentation, etc.



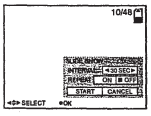
1 Set the MODE selector to PLAY.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "FILE" with the control button, then press it.
The FILE menu appears on the screen.



4 Select "SLIDE SHOW" with the control button, then press it.



5 Set "INTERVAL" with the control button.
Set it with ◄/► of the control button.
You can select from 1 MIN (one minute), 30 SEC (30 seconds), 10 SEC (10 seconds), 5 SEC (five seconds), or 3 SEC (three seconds).

6 Set "REPEAT" with the control button.
❒ ON: Plays back images in a continuous loop until "RETURN" is selected.
❒ OFF: After all images played back, slide show ends.

7 Select "START" with the control button.
Slide show begins.

To cancel the setting

Select "CANCEL" with the control button, then press it.

Note

Interval time may not stay in adjustment depending on setting of image size and quality.

To operate the slide show

- Playback pause
  Select "II" with the control button, then press it.
- Playback pause release
  Select "►" with the control button, then press it.
- Search
  Select "I◄◄/►►I" with the control button, then press ◄/► of it. You can also operate with the control button only.
- Cancel
  Select "RETURN " with the control button, then press it.

Preventing accidental erasure (PROTECT)

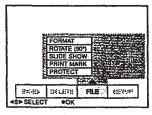
To prevent accidental erasure, you can protect all or selected images.

In single mode

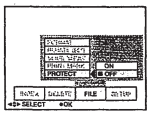
1 Set the MODE selector to PLAY, then display the image to protect.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "FILE" with the control button, then press it.
The FILE menu appears on the screen.



4 Select "PROTECT" with the control button, then press it.



5 Select "ON" with the control button, then press it.
The displayed image is protected.

6 Press ▼ of the control button repeatedly.
The menu bar disappears from the screen.
"o-n" appears on the protected image.

To release protection

Select "OFF" with the control button in the step 5, then press it.

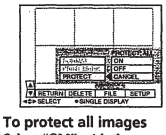
In INDEX mode

1 Display the INDEX screen.

2 Select "PROTECT" of the FILE menu with the control button, then press it.
The FILE menu appears on the LCD screen.

3 Select "ALL" to protect (or unprotect) all images, or "SELECT" to protect (or unprotect) selected images with the control button, then press it.

When selecting "ALL"



To protect all images

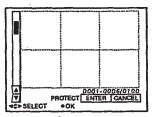
Select "ON" with the control button, then press it.

To release protection of all images

Select "OFF" with the control button, then press it.

Continue to the next page →

When selecting "SELECT"



To protect images

① Select the image to protect with the control button, then press it.
The protect indicator (🔑) appears on the selected image.

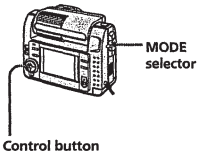
② After selecting all images to protect, select "ENTER" with the control button, then press it.
The protect indicator (🔑) changes from green to white.

To release protection

Select the images to unprotect in the step ①, then select "ENTER" with the control button then press it.

Deleting images (DELETE)

You can delete all or selected images that you no longer want to keep.

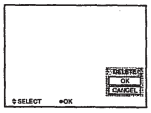


In single mode

1 Set the MODE selector to PLAY, then display the image to delete.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "DELETE" with the control button, then press it.



4 Select "OK" with the control button, then press it.
The image is deleted.

Note

Once you delete an image, you cannot restore it. Check the image to delete carefully before deleting.

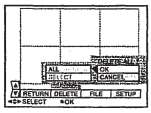
In INDEX mode

1 Display the INDEX screen.

2 Select "DELETE" with the control button, then press it.

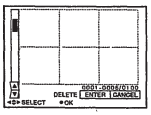
3 Select "ALL" to delete all images, or "SELECT" to delete selected images with the control button, then press it.

When selecting "ALL"



Select "OK" with the control button, then press it.

When selecting "SELECT"



① Select the image to delete with the control button, then press it.
The delete indicator (green) (🗑) appears on the selected image.

② After selecting all the images to delete, select "ENTER" with the control button, then press it.
The selected images are deleted.

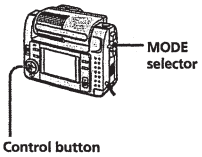
To cancel deleting

Select "CANCEL" with the control button, then press it.

Notes

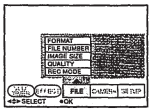
- Even if you select "ALL," you cannot delete the protected image.
- When you select "SELECT," you cannot select a protected image.

Formatting (initializing) a Memory Stick

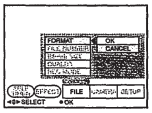


1 Press ▲ of the control button.
The menu bar appears on the LCD screen.

2 Select "FILE" with the control button, then press it.
The FILE menu appears.



3 Select "FORMAT" with the control button, then press it.



4 Select "OK" with the control button, then press it.

To cancel formatting

Select "CANCEL" with the control button in the step 4, then press it.

Note

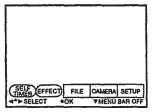
If you initialize the Memory Stick, all the images stored in Memory Stick are lost even if the image is protected. Before initialization, make sure to copy the images you want to store on your computer, etc.

▶Changing the menu setting

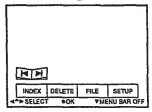
Changing the menu setting

1 Press ▲ of the control button.
The menu bar appears on the LCD screen.

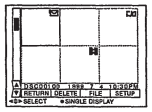
MOVIE/STILL



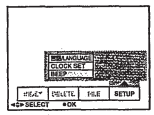
PLAY (single mode)



PLAY (INDEX mode)



2 Select the desired item with the control button, then press it.
The color of the item changes from blue to yellow.



3 Select the desired setting with the control button, then press it.
The screen returns to the menu in the step 2.

To clear the menu

Press ▼ of the control button repeatedly until the menu bar disappears.

Setting the mode of each item

Menu items that can be modified differ depending on the setting of the MODE selector. The LCD screen shows only the items you can operate at the moment. Initial settings are indicated in bold letters.

Items in STILL/MOVIE mode

SELF TIMER

Select this item to record with the self-timer. (page 24)

EFFECT

<NEG. ART/SEPIA/B&W/SOLARIZE>
- Select NEG. ART to record the image color reversed.
- Select SEPIA to record sepia image.
- Select B&W to record monochrome image.
- Select SOLARIZE to record illustrational image.

FILE

FORMAT
<OK/CANCEL>
- Select OK to format a Memory Stick.
- Select CANCEL to cancel formatting a Memory Stick.

FILE NUMBER <SERIES/**NORMAL**>
- Select SERIES to put numbers to files in sequence even if the Memory Stick is changed.
- Select NORMAL to reset the numbering of files each time the Memory Stick is changed.

IMAGE SIZE (during STILL mode) <**1600 × 1200**/1024 × 768/640 × 480>
- Select 1600 × 1200 to record a 1600 × 1200 JPEG image.
- Select 1024 × 768 to record a 1024 × 768 JPEG image.
- Select 640 × 480 to record a 640 × 480 JPEG image.

(during MOVIE mode) <**320 × 240**/160 × 112>
- Select 320 × 240 to record a 320 × 240 MPEG image.
- Select 160 × 112 to record a 160 × 112 MPEG image.

QUALITY (only in STILL mode) <FINE/**STANDARD**>
- Select FINE when giving priority to image quality.
- Select STANDARD as a standard image quality.

REC MODE (only in STILL mode) <VOICE/E-MAIL/**NORMAL**>
- Select VOICE to record a still image and sound together besides a JPEG file.
- Select E-MAIL to record a 320 × 240 JPEG file besides a 1600 × 1200, 1024 × 768, or 640 × 480 JPEG file.
- Normally select NORMAL. A JPEG file is recorded in selected image size.

REC TIME SET (only in MOVIE mode) <15 SEC/10 SEC/**5 SEC**>
Adjust the recording time of the moving image.

CAMERA

WHITE BALANCE <IN DOOR/OUT DOOR/HOLD/**AUTO**>
- Select IN DOOR to record images inside.
- Select OUT DOOR to record images outside.
- Select HOLD to record single colored subject or background.
- Select AUTO to adjust the white balance automatically.

FLASH LEVEL (only in STILL mode) <HIGH/**NORMAL**/LOW>
- Select HIGH to make the flash level higher than normal.
- Normally select NORMAL.
- Select LOW to make the flash level lower than normal.

EXPOSURE <+1.5EV to –1.5EV>
Select this item to adjust exposure.

SETUP

DEMO <STBY/ON or **OFF**>
Only when you use the AC power adaptor/charger during MOVIE or STILL mode, DEMO appears in the menu.
To stop the demonstration, turn off the camera.
- Select ON to make the demonstration appear. The demonstration will start about 10 minutes after the power is turned on if the camera has not been operated.
- Select OFF to deactivate the demonstration mode.

言語/LANGUAGE <**ENGLISH** or 日本語/JPN>
- Select ENGLISH to display all items in English.
- Select 日本語/JPN to display all items in Japanese.

CLOCK SET
Select this item to set the date and time.

BEEP <SHUTTER/**ON**/OFF>
- Select SHUTTER to turn off the beep only.
- Normally set to ON.
- Select OFF to turn off the beep/shutter sound.

Items in PLAY (single) mode

INDEX

Select this item to display six recorded images at a time.

DELETE

<OK/CANCEL>
- Select OK to delete displayed image.
- Select CANCEL to cancel deleting image.

FILE

FORMAT
<OK/CANCEL>
- Select OK to format a Memory Stick.
- Select CANCEL to cancel formatting a Memory Stick.

ROTATE (90°)
Select this item to rotate an image.

SLIDE SHOW
Select this item to play back images in a continuous loop.

PRINT MARK <ON/**OFF**>
- Select ON to mark the print mark on the image.
- Select OFF to unmark the mark.

PROTECT <ON/**OFF**>
- Select ON to protect displayed image.
- Select OFF to release protection of the image.

Items in PLAY (INDEX) mode

DELETE

<ALL/SELECT>
- Select ALL to delete all images.
- Select SELECT to delete selected images.

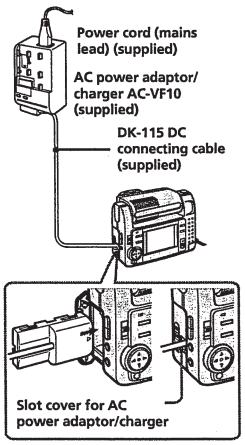
FILE

FORMAT
<OK/CANCEL>
- Select OK to format a Memory Stick.
- Select CANCEL to cancel formatting a Memory Stick.

PRINT MARK <ALL/SELECT/CANCEL>
- Select ALL to unmark the print marks on all images.
- Select SELECT to mark or unmark the print mark on the selected images.
- Select CANCEL to cancel the setting.

PROTECT <ALL/SELECT/CANCEL>
- Select ALL to protect all images.
- Select SELECT to protect or unprotect selected images.
- Select CANCEL to cancel the setting.

Using the house current (mains)


Power cord (mains lead) (supplied)
AC power adaptor/ charger AC-VF10 (supplied)
DK-115 DC connecting cable (supplied)
Slot cover for AC power adaptor/charger

1 Open the battery cover.

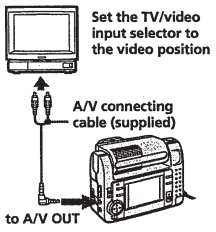
2 Insert the one end of the DK-115 DC connecting cable to the battery terminal, and close the cover.
When inserting the cable, open the slot cover for AC power adaptor/charger and be careful not to pinch the cable.

3 Connect the other end of the DC connecting cable to the AC power adaptor/charger.

4 Connect the power cord (mains lead) to the AC power adaptor/charger, and to a wall outlet (mains).

Watching images on a TV screen

Connect the camera to the TV that has a video input jack. You can enjoy a "SLIDE SHOW" on the TV screen. When shooting an image in macro, you can adjust the focus more easily on the TV screen.



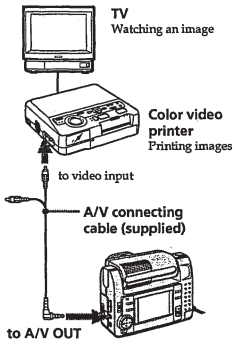
1 Connect the A/V OUT jack of the camera to the video input jack of the TV.

2 Start playback on the camera. Playback picture appears on the TV screen.

Notes
- Before making connections, turn off each equipment. After connections are completed, turn on each equipment.
- When you use the camera with connecting other equipment for a long time, use the AC power adaptor/charger.
- You cannot use a TV that has an antenna (aerial) connector only.
- When the MODE selector is set to MOVIE or STILL and the lens is rotated to the same side as the LCD screen (face to face shooting), the mirror image appears upside-down on the TV screen.
- Beep does not sound when connecting with the A/V connecting cable.

Printing the recorded images

Using a printer, you can print images recorded on this camera.
You can send the image data to the printer that has video input jack. For details on printing, refer to the instruction manual of the printer.



1 Connect the A/V OUT jack of the camera to the video input jack of the printer.

2 Start playback on the camera.
Playback picture appears on the TV screen.

3 The printer receives image data from the camera and starts printing.

For the detailed procedures, refer to the instruction manual of the printer.

Marking a print mark on an image

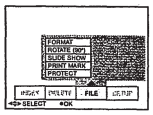
You can mark a print mark on images recorded with this camera. This mark is convenient for checking the images to print.
Your camera conforms with the DPOF (Digital Print Order Format) standard for specifying the still images to print out.

In single mode

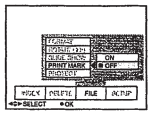
1 Set the MODE selector to PLAY and display the image to mark.

2 Press ▲ of the control button.
The menu bar appears on the LCD screen.

3 Select "FILE" with the control button, then press it.
The FILE menu appears on the screen.



4 Select "PRINT MARK" with the control button, then press it.



5 Select "ON" with the control button, then press it.
The print mark is marked on an image.

6 Press ▼ of the control button repeatedly.
The menu bar disappears from the screen.
"🖹" is marked on the image.

To unmark the print mark
Select "OFF" with the control button in the step 5, then press it.

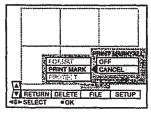
In INDEX mode

1 Display the INDEX screen.

2 Select "PRINT MARK" of "FILE" with the control button, then press it.

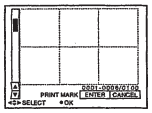
3 Select "ALL" to unmark all images, or "SELECT" to mark (or unmark) selected images with the control button, then press it.

When selecting "ALL"



To unmark the all print marks
Select "OFF" with the control button, then press it.

When selecting "SELECT"



To mark the print mark
① Select the image to mark with the control button, then press it. "🖹" appears on the selected image.

② After selecting all the images to mark, select "ENTER" with the control button, then press it.
"🖹" changes from green to white.

To unmark the selected print mark
Select the images to unmark in the step ①, then select "ENTER" with the control button, then press it.

▶Additional information

Precautions

On Memory Stick

- Do not remove the battery or the AC power adaptor/charger during recording or playback. Always turn off the power before you remove the battery or disconnect the AC power adaptor/charger.
- Do not touch the terminal of the Memory Stick by your hand or a metal object.
- Do not attach any other material than the supplied label on the label space of the Memory Stick.
- Do not strike, bend, or drop the Memory Stick.
- Do not disassemble or convert the Memory Stick.
- Do not wet the Memory Stick.
- Do not use or store the Memory Stick in the following areas:
  - Hot locations such as the inside of a car or the outdoors under hot weather.
  - Humid or corrosive locations.
- Carry or store the Memory Stick in its supplied case.
- Setting the write-protect switch to "LOCK" disables you to record, delete, or format data.
- We recommend that you make a backup copy important data.
- Do not remove the Memory Stick while reading or writing data.
- Recorded data may be lost or damaged in the following situations:
  - When you remove the Memory Stick or turn off the camera while reading or writing data.
  - When you use the Memory Stick in the locations subject to static electricity or noise.
- This camera is not guaranteed to properly play back images shot with other equipment. The images shot with this camera are not guaranteed to be played back properly with other equipment.

On moisture condensation

If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. Should this occur, the camera will not operate properly. In this case, remove the battery pack and open the battery cover and wait about an hour for the moisture to evaporate.

How to prevent moisture condensation

When bringing the camera from a cold place to a warm place, put the camera in a plastic bag and allow it to adapt to room conditions over a period of time.
① Be sure to tightly seal the plastic bag containing the camera.
② Remove the bag when the air temperature inside it has reached the temperature surrounding it (about an hour).

On cleaning

Cleaning the LCD screen

Wipe the screen surface with the cleaning cloth (not supplied) or a LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the camera surface

Clean the camera surface with a soft cloth slightly moistened with water. Do not use any type of solvent such as alcohol or benzene as it may mar the finish of the casing.

If you have any questions or problems concerning your camera, please consult your nearest Sony dealer.

About the lithium battery

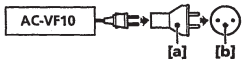
Your camera is supplied with a rechargeable lithium battery installed so as to retain the date and time, etc., regardless of the setting of the POWER switch. The lithium battery is always charged as long as you are using the camera. The battery, however, will get discharged gradually if you do not use the camera. It will be completely discharged in about six months if you do not use the camera at all. Even if the lithium battery is not charged, it will not affect the camera operation. To retain the date and time, etc., charge the battery if the battery is discharged. The following are charging methods:

- Connect the camera to a wall outlet (mains) using the supplied AC power adaptor/charger, and leave the camera with the POWER switch turned off for more than 24 hours.
- Or, install the fully charged battery pack in the camera, and leave the camera with the POWER switch turned off for more than 24 hours.

Using your camera abroad

Power sources

You can use your camera in any country or area with the supplied battery charger within 100 V to 240 V AC, 50/60 Hz. Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet (mains) **[b]**.



Watching the playback picture on TV

If you want to view the playback picture on a TV, you need a TV having a video input jack and a video connecting cable.
The color system of the TV must be the same as that of your digital still camera. TV color systems differ from country to country. Check the following list:

NTSC system countries

Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system countries

Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system country

Brazil

PAL-N system countries

Argentina, Paraguay, Uruguay

SECAM system countries

Bulgaria, Czech Republic, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

Troubleshooting

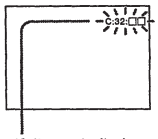
Should any problem persist after you have made these checks, consult your nearest Sony dealer. If warning and notice messages appear on the LCD screen, see page 52.

Symptom	Cause/Solution
The camera does not work.	• The battery is weak (the indicator appears on the LCD screen). ➡ Charge the battery. (page 9) • The AC power adaptor/charger is not connected securely. ➡ Connect it to the battery terminal of the camera and a wall outlet (mains) firmly. (page 45) • The built-in micro computer does not work properly. ➡ Disconnect any power sources and reconnect it after one minute. Then turn the power on by sliding the POWER switch down.
You cannot record images.	• The MODE selector is not set to MOVIE or STILL. ➡ Set it to MOVIE or STILL. (pages 14, 15) • Memories are full. ➡ Delete certain images you do not want to keep, and then start recording. (page 38) • No Memory Stick has been inserted into this camera. ➡ Insert a Memory Stick. (page 11) • The write protect tab on the Memory Stick is set to LOCK. ➡ Set it to recording position. • The battery is weak (the indicator appears on the LCD screen). ➡ Charge the battery. (page 9)
The picture is out of focus.	• The camera is not in macro recording mode if you shoot a subject that is about 4 to 19 3/4 inches (10 to 50 cm) away from the lens. ➡ Press the (macro) button to be in macro recording mode. (page 25)
The picture is noisy.	• The camera is placed near a TV or other equipment that uses strong magnets. ➡ Place the camera away from the TV, etc.
The picture is too dark.	• You are shooting a subject with the light source behind the subject or light is insufficient. ➡ Adjust exposure. (page 31) ➡ Adjust brightness of the LCD screen. (page 8)

Symptom	Cause/Solution
Vertical streaks appear when shooting a very bright subject.	• The smear phenomenon. ➡ The camera is not malfunctioning.
Black points and/or bright (red, blue or green) points appear on the LCD screen.	• These points are normal with the LCD screen and do not affect the recorded image in any way. ➡ The camera is not malfunctioning.
The battery life deteriorates too fast.	• The battery is not charged enough. ➡ Charge the battery fully. (page 9) • The battery is dead. ➡ Replace the battery with a new one. (page 10)
You cannot play back the images.	• The MODE selector is not set to PLAY. ➡ Set it to PLAY. (pages 17, 18) • No Memory Stick has been inserted, or no image has been recorded on the Memory Stick. ➡ Insert the recorded Memory Stick. (page 11) • The battery is discharged. ➡ Charge the battery. (page 9)
You cannot delete an image.	• The image is protected. ➡ Cancel the protection of the image . (page 37) • The write protect tab on the Memory Stick is set to LOCK. ➡ Set it to recording position.

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

- C:□□:□□
  You can reverse the camera malfunction yourself.
- E:□□:□□
  Contact your Sony dealer or local authorized Sony service facility.

First three digits	Cause and/or Corrective Action
C:32:□□	• Trouble is with the hardware. → Turn the power off and on again.
C:13:□□	• An unformatted Memory Stick is inserted. → Format the Memory Stick. (page 40) • A Memory Stick is broken. → Insert a new Memory Stick. (page 11)
E:61:□□ E:91:□□	• A camera malfunction which you can not reverse has occurred. → Contact your Sony dealer or local authorized Sony service facility and inform them of the five digits. (example: E:61:10)

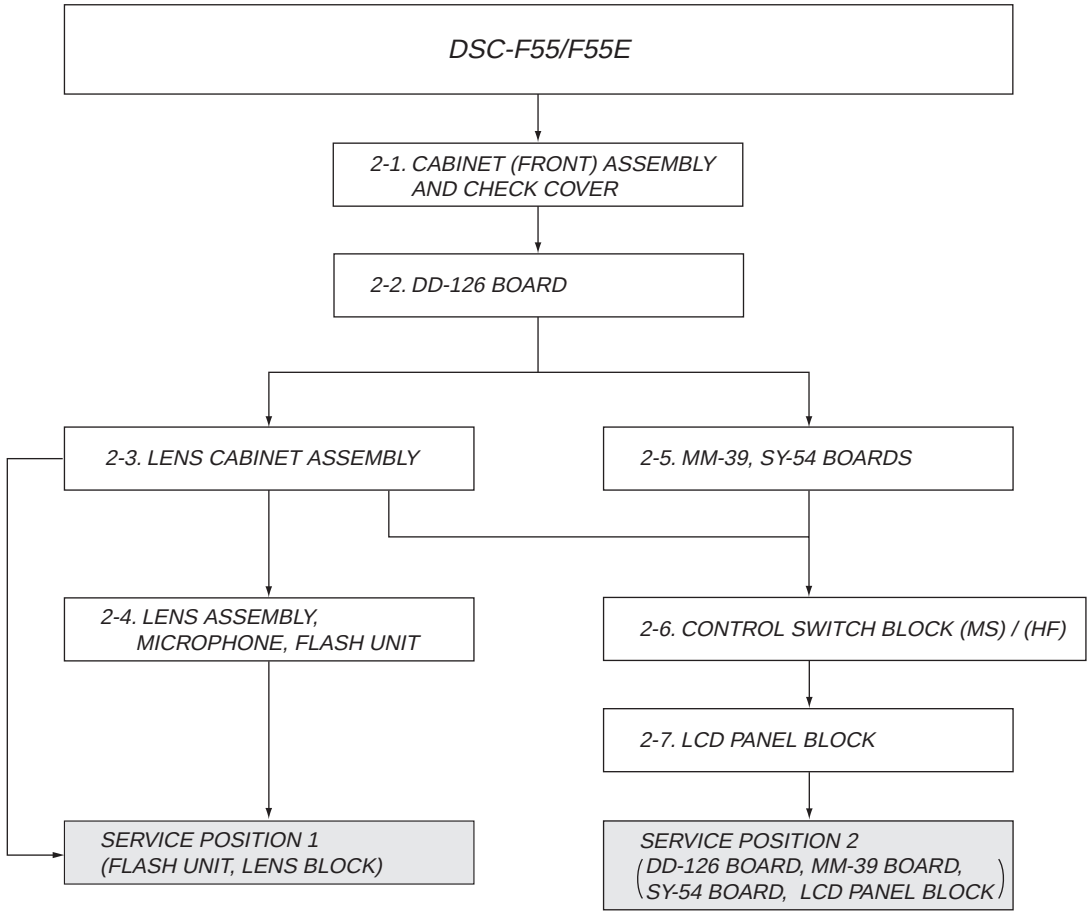
Warning and notice messages

Various messages appear on the LCD screen. Check them with the following list.

Message	Meaning/Remedy
NO MEMORY STICK	• No Memory Stick has been inserted. ➡ Insert a Memory Stick. (page 11)
SYSTEM ERROR	• Abnormal conditions are encountered with the hardware. ➡ Turn on the power again.
MEMORY STICK ERROR	• An inserted Memory Stick is broken. • An inserted Memory Stick is malfunction. ➡ Insert the proper Memory Stick. (page 11)
FORMAT ERROR	• Failed to format the Memory Stick. ➡ Format the Memory Stick. (page 40)
MEMORY STICK LOCKED	• The tab on the Memory Stick is set to LOCK position. ➡ Set it to recording position.
NO MEMORY SPACE	• The capacity of the Memory Stick is full. ➡ Delete images you do not want to keep, or insert a new Memory Stick, then start recording. (pages 11, 38)
FILE ERROR	• The file is broken down. ➡ Delete the broken file. (page 38)
FILE PROTECT	• The image is protected. ➡ Cancel the protection using the menu. (page 37)
NO FILE	• No image has been recorded on the Memory Stick. ➡ Insert the recorded Memory Stick. • An inserted Memory Stick does not usable with this camera. ➡ Insert the proper Memory Stick.
for "InfoLITHIUM" BATTERY ONLY	• The battery is not the "InfoLITHIUM" type. ➡ Use the "InfoLITHIUM" battery. (page 9)
	• The battery is weak. ➡ Charge the battery. (page 9)

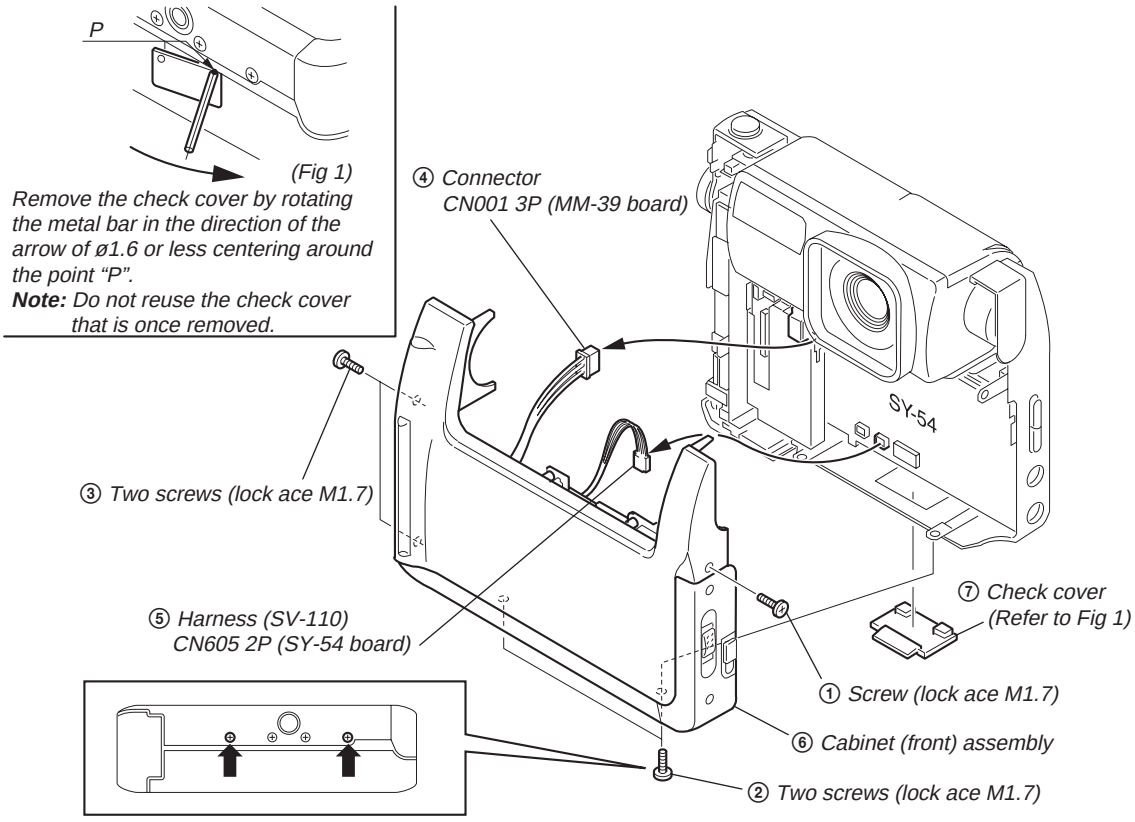
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

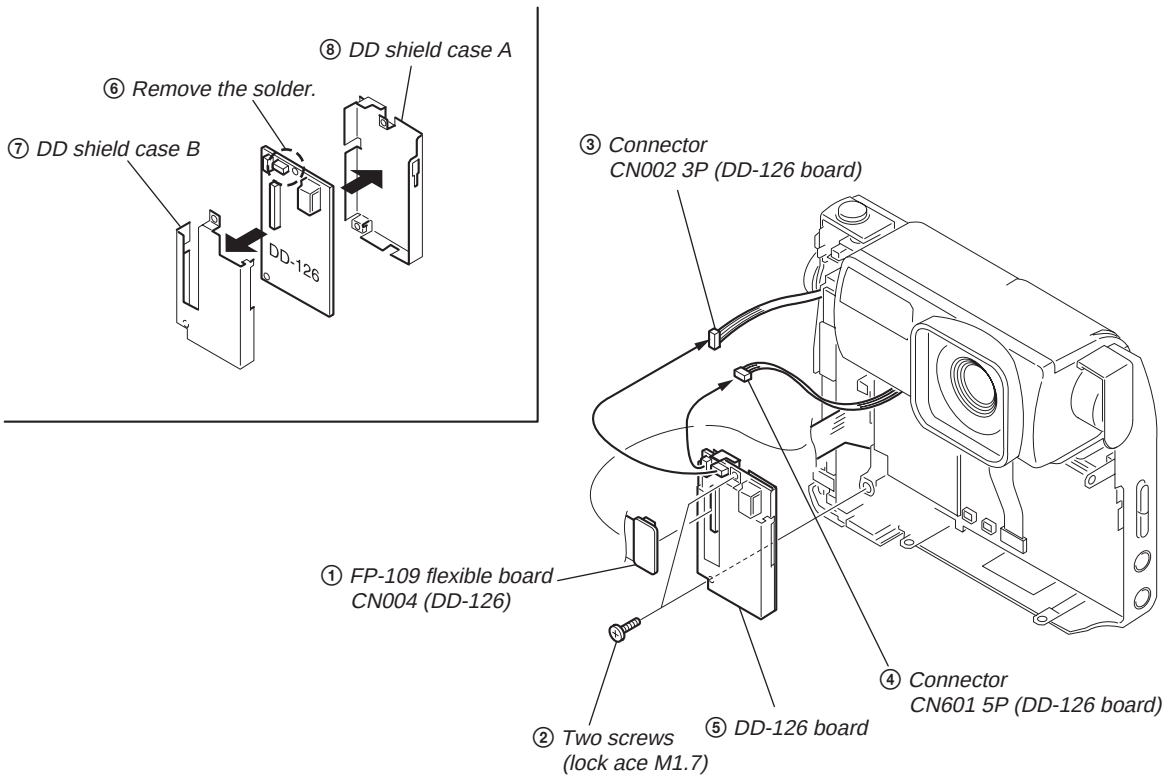

DSC-F55/F55E
2-1. CABINET (FRONT) ASSEMBLY AND CHECK COVER
2-2. DD-126 BOARD
2-3. LENS CABINET ASSEMBLY
2-5. MM-39, SY-54 BOARDS
2-4. LENS ASSEMBLY, MICROPHONE, FLASH UNIT
2-6. CONTROL SWITCH BLOCK (MS) / (HF)
2-7. LCD PANEL BLOCK
SERVICE POSITION 1 (FLASH UNIT, LENS BLOCK)
SERVICE POSITION 2 (DD-126 BOARD, MM-39 BOARD, SY-54 BOARD, LCD PANEL BLOCK)

NOTE: Follow the disassembly procedure in the numerical order given.

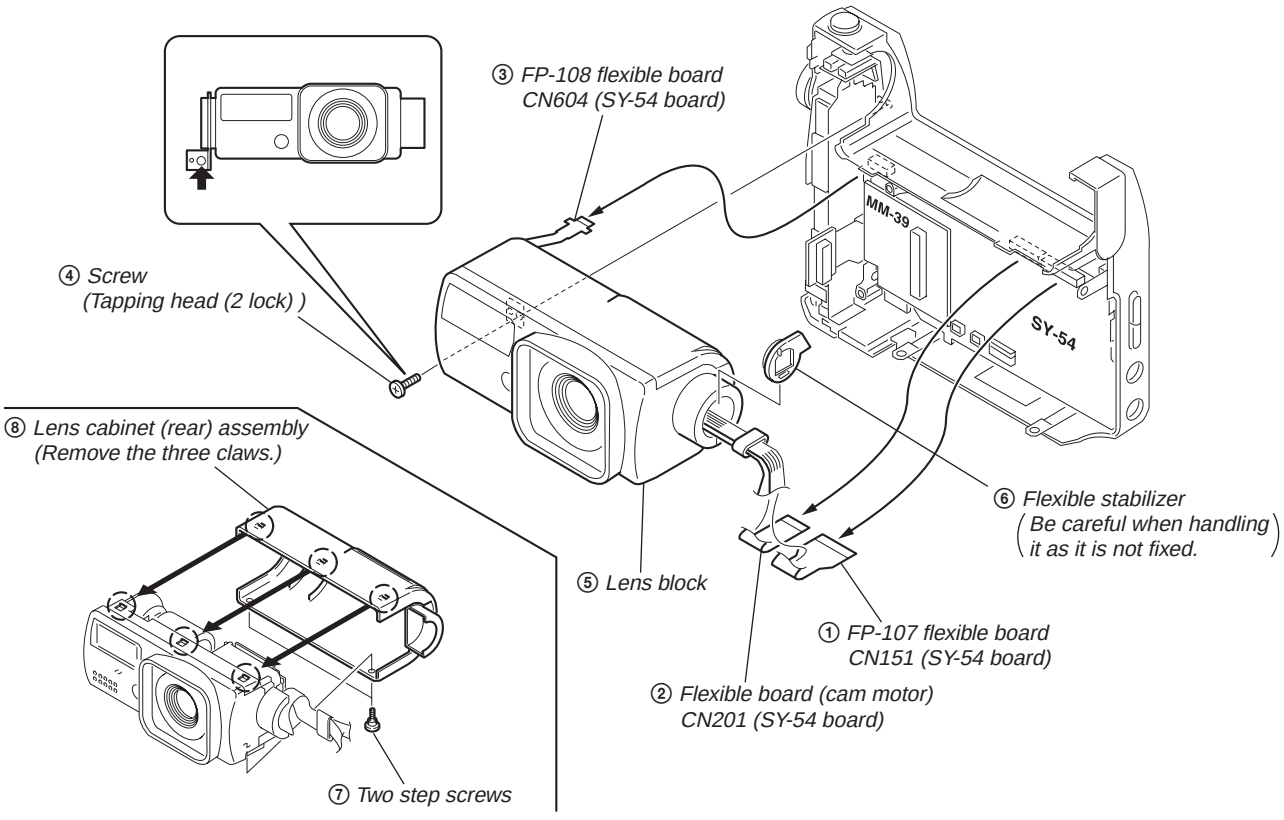
2-1. CABINET (FRONT) ASSEMBLY AND CHECK COVER


P
(Fig 1)
Remove the check cover by rotating the metal bar in the direction of the arrow of ø1.6 or less centering around the point "P".
Note: Do not reuse the check cover that is once removed.
④ Connector CN001 3P (MM-39 board)
SY-54
③ Two screws (lock ace M1.7)
⑤ Harness (SV-110) CN605 2P (SY-54 board)
⑦ Check cover (Refer to Fig 1)
① Screw (lock ace M1.7)
⑥ Cabinet (front) assembly
② Two screws (lock ace M1.7)

2-2. DD-126 BOARD

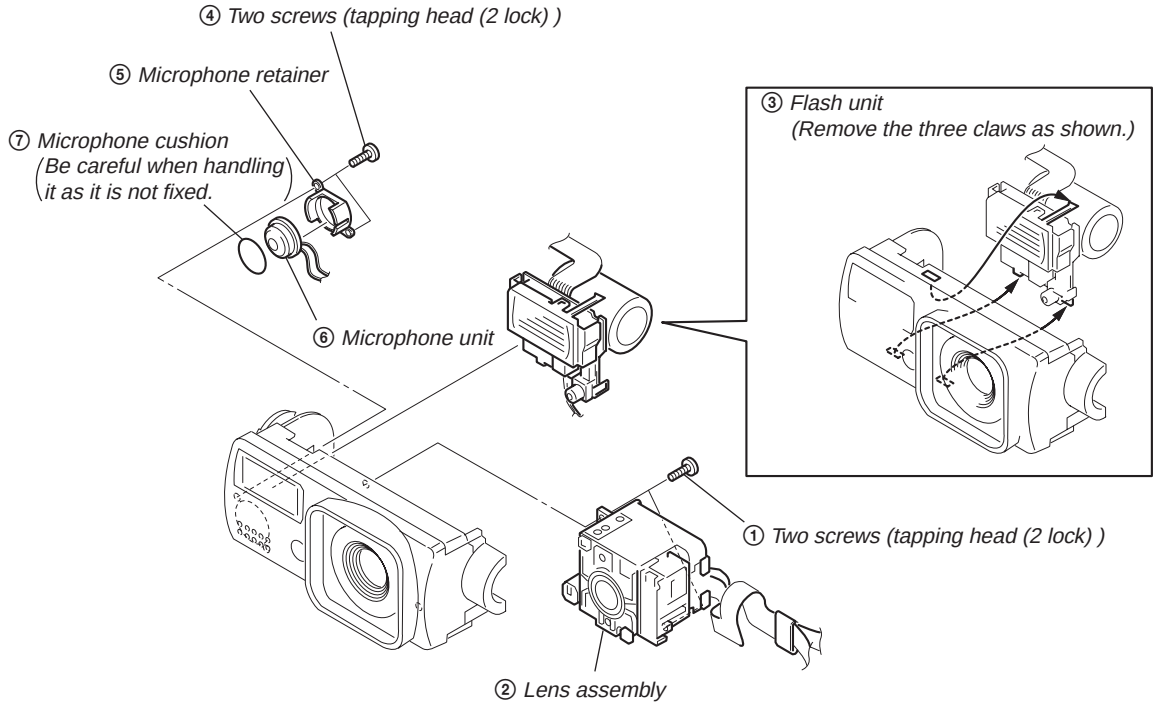


2-3. LENS CABINET ASSEMBLY



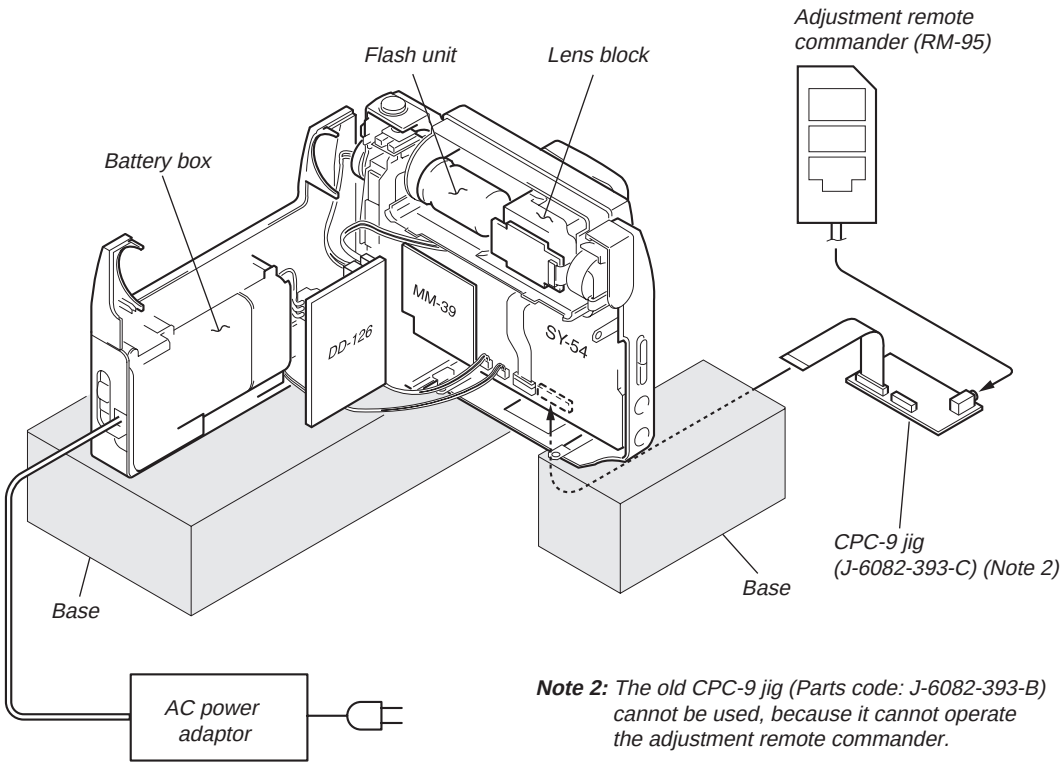
2-4. LENS ASSEMBLY, MICROPHONE, FLASH UNIT

Note : *The built-in charging capacitor inside the FLASH unit is charged to the maximum of 300 V. There is a danger of electric shock due to the high voltage when the capacitor is handed by bare hand. Discharge the voltage remained in the capacitor, referring to the Service Note (See page 5).*


④ Two screws (tapping head (2 lock))
⑤ Microphone retainer
⑦ Microphone cushion
(Be careful when handling it as it is not fixed.
⑥ Microphone unit
③ Flash unit
(Remove the three claws as shown.)
① Two screws (tapping head (2 lock))
② Lens assembly

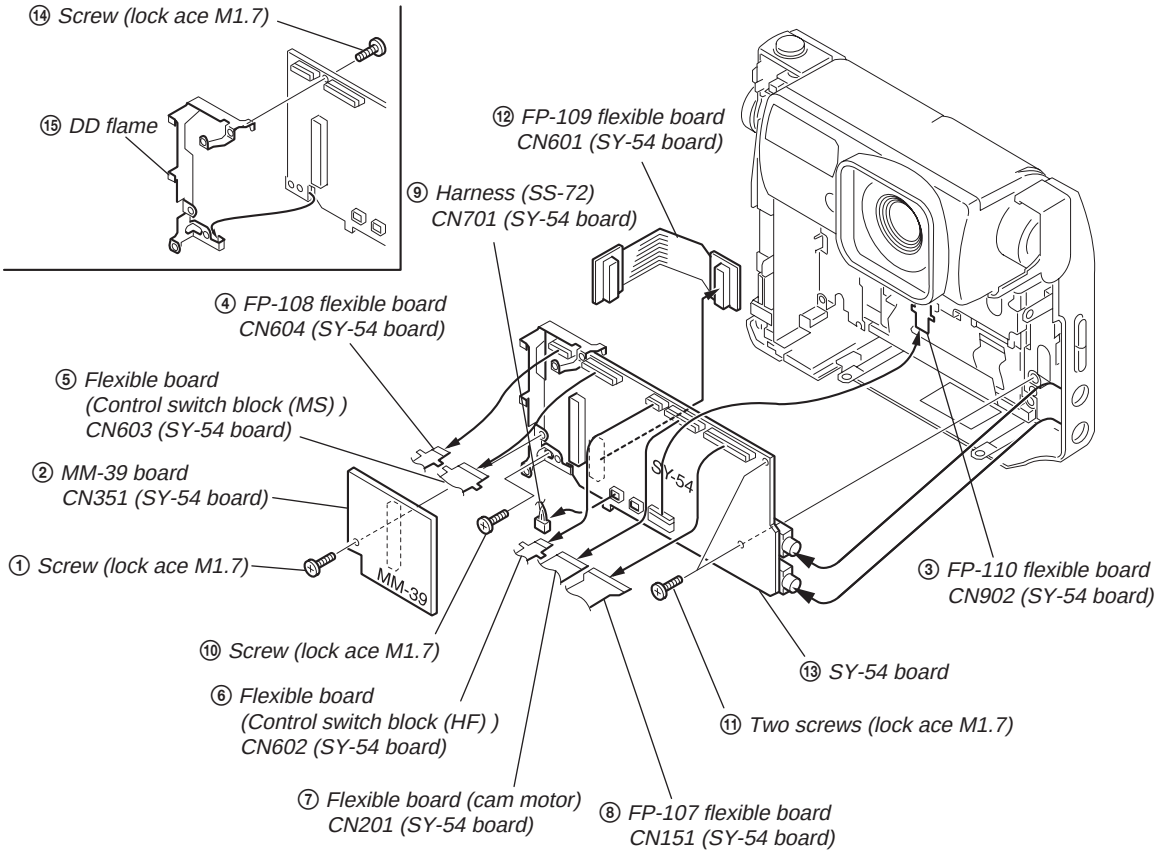
[SERVICE POSITION 1 (FLASH UNIT, LENS BLOCK)]

Note 1: *The built-in charging capacitor inside the FLASH unit is charged to the maximum of 300 V. There is a danger of electric shock due to the high voltage when the battery is handed by bare hand. Discharge the voltage remained in the battery, referring to the Service Note (See page 5).*

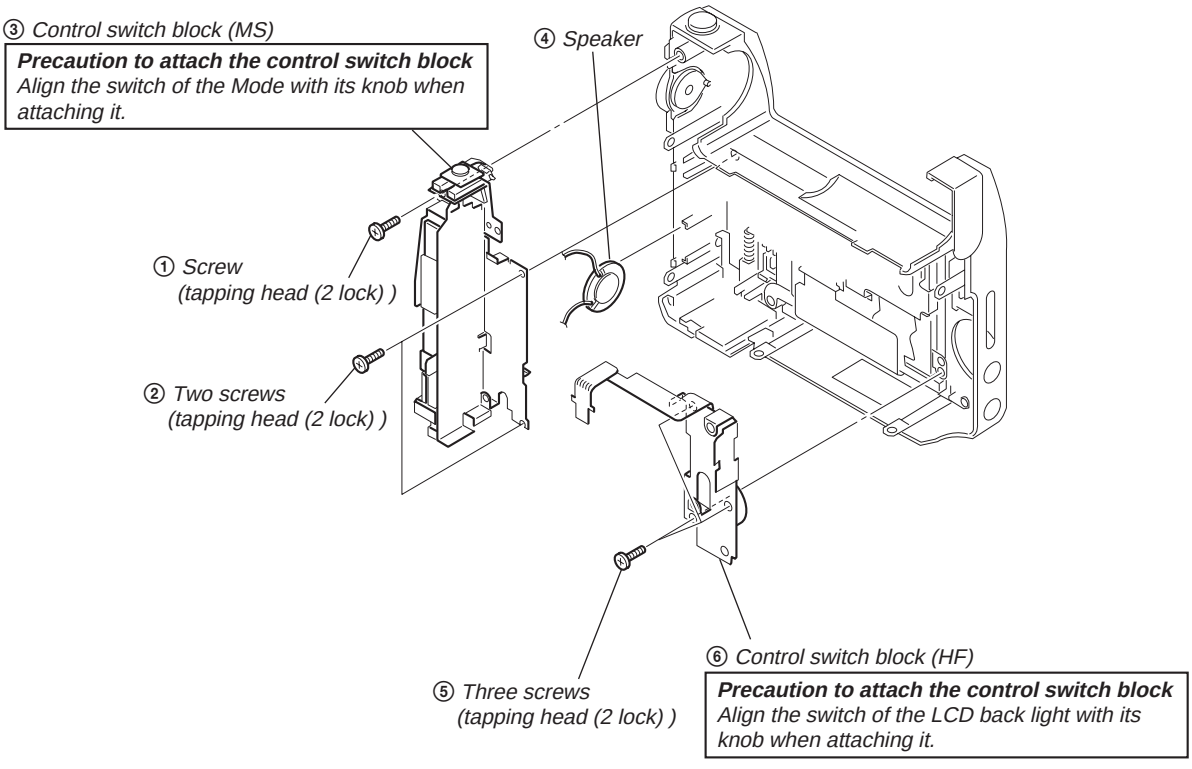


Note 2: *The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjustment remote commander.*

2-5. MM-39, SY-54 BOARDS

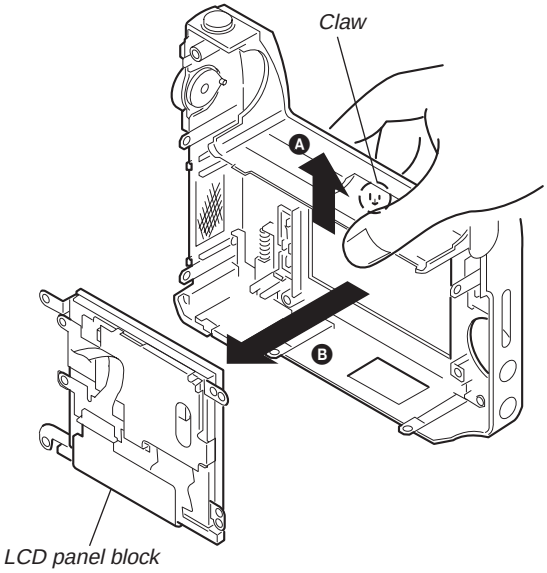


2-6. CONTROL SWITCH BLOCK (MS) / (HF)

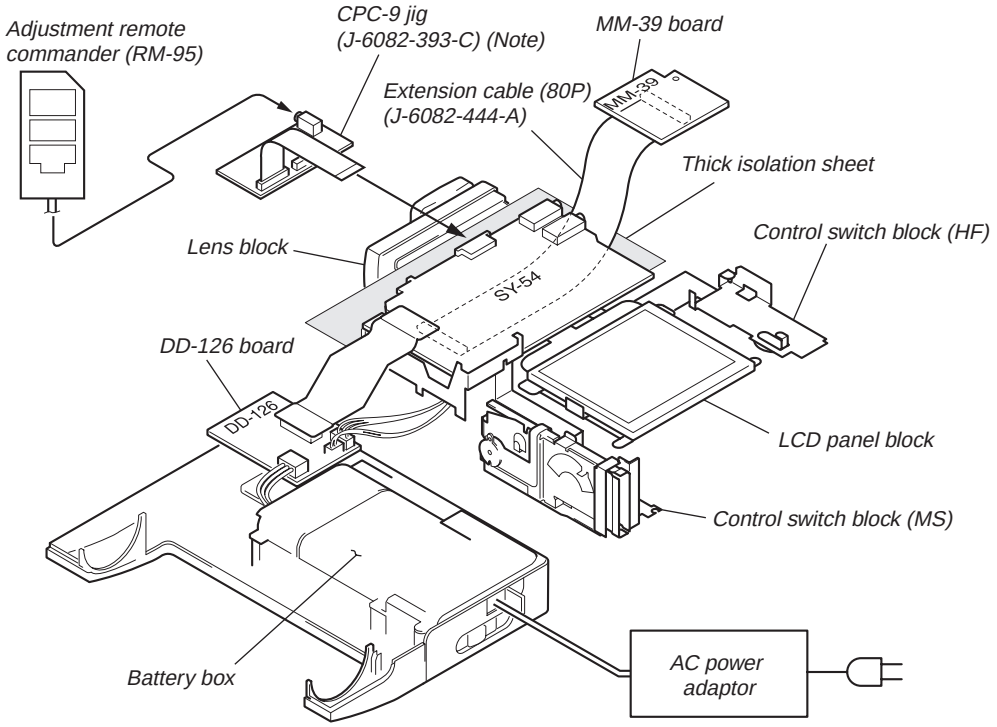

③ Control switch block (MS)
Precaution to attach the control switch block
Align the switch of the Mode with its knob when attaching it.
④ Speaker
① Screw
(tapping head (2 lock))
② Two screws
(tapping head (2 lock))
⑤ Three screws
(tapping head (2 lock))
⑥ Control switch block (HF)
Precaution to attach the control switch block
Align the switch of the LCD back light with its knob when attaching it.

2-7. LCD PANEL BLOCK

• Open the cabinet in the direction of the arrow Ⓐ as shown, release the claw of the LCD display panel block, and remove the LCD panel block in the direction of the arrow Ⓑ.

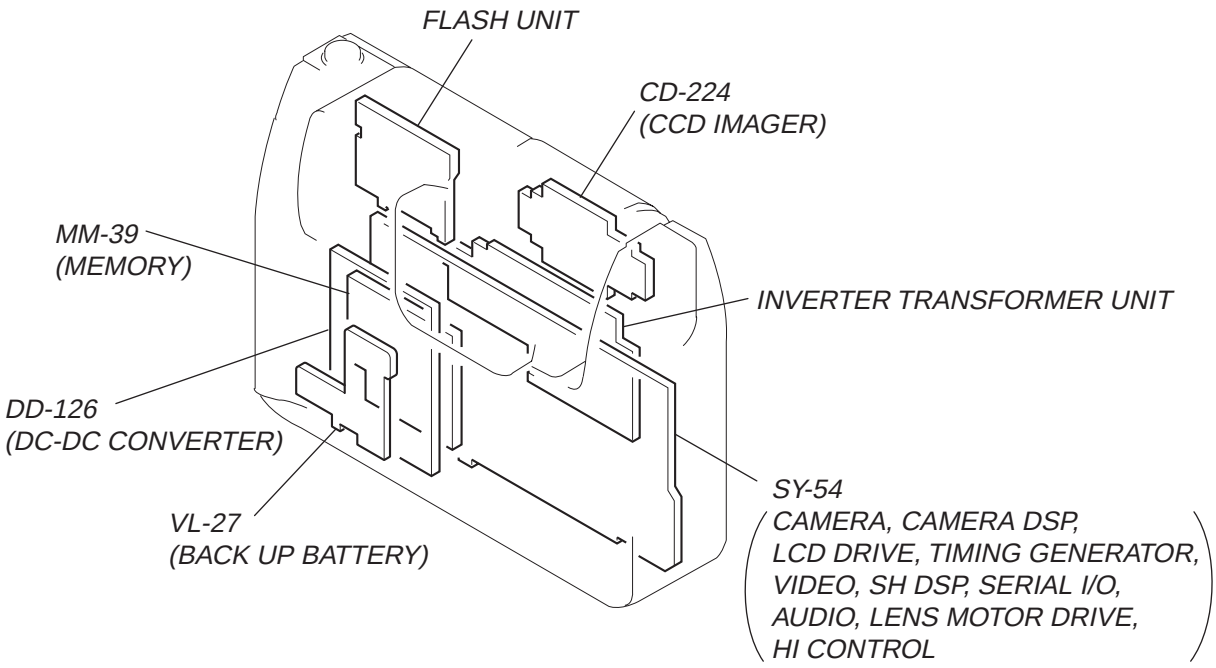


[SERVICE POSITION 2 (DD-126 BOARD, MM-39 BOARD, SY-54 BOARD, LCD PANEL BLOCK)]

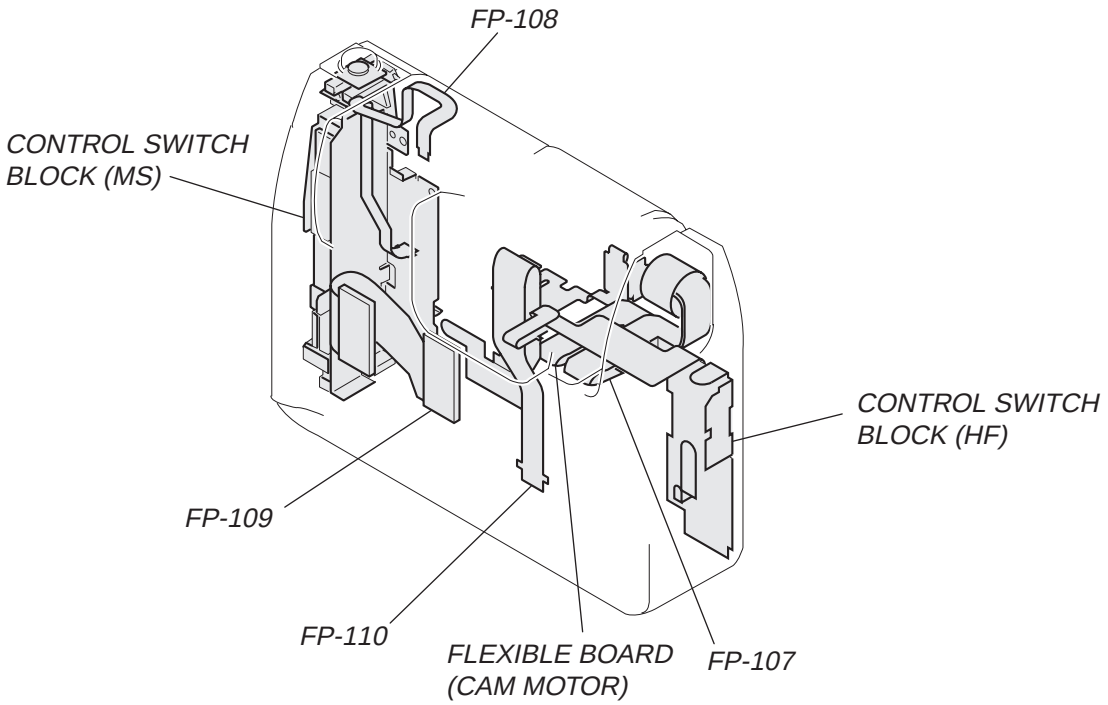


Note: *The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjustment remote commander.*

2-8. CIRCUIT BOARDS LOCATION

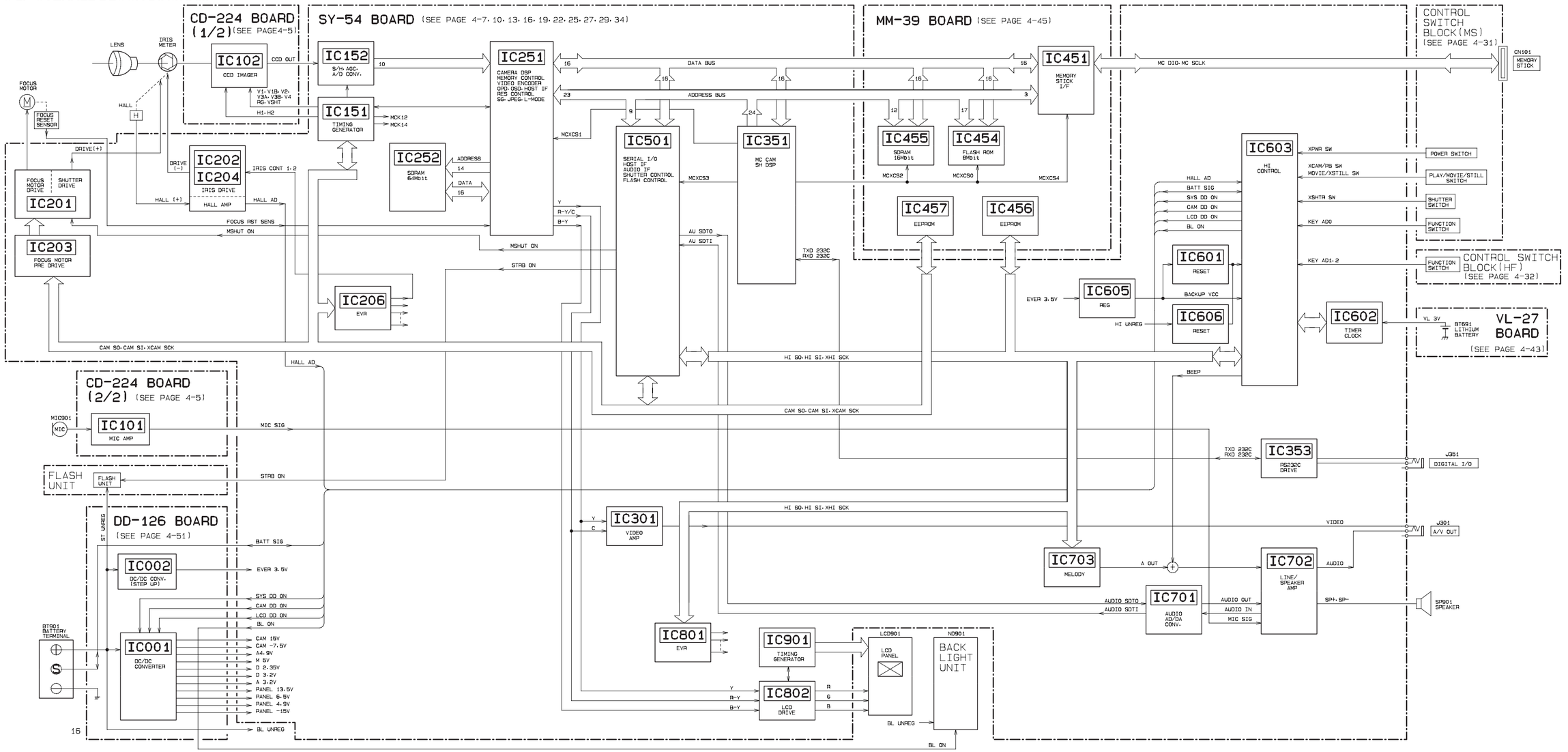


2-9. FLEXIBLE BOARDS LOCATION

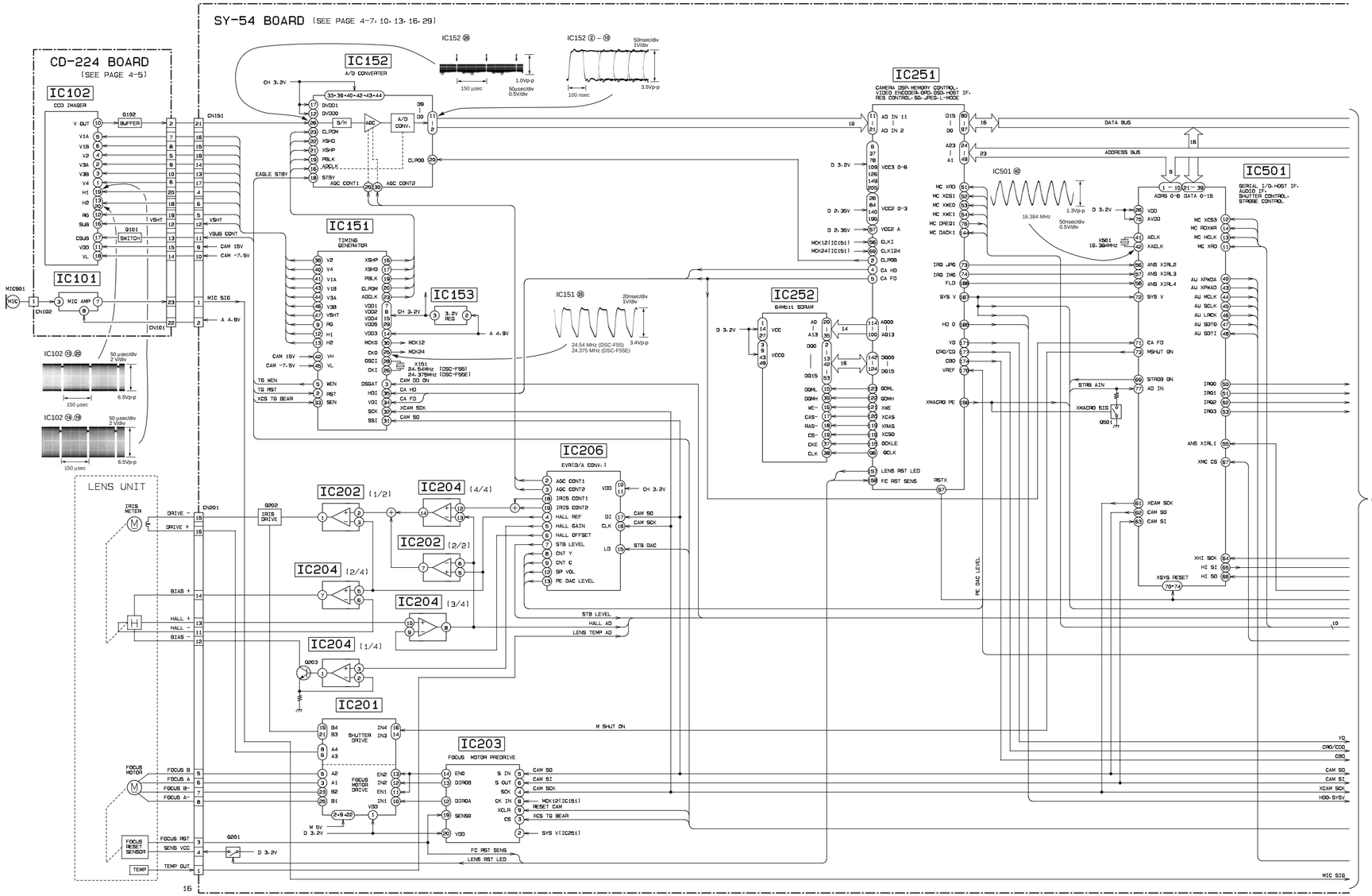


SECTION 3
BLOCK DIAGRAMS

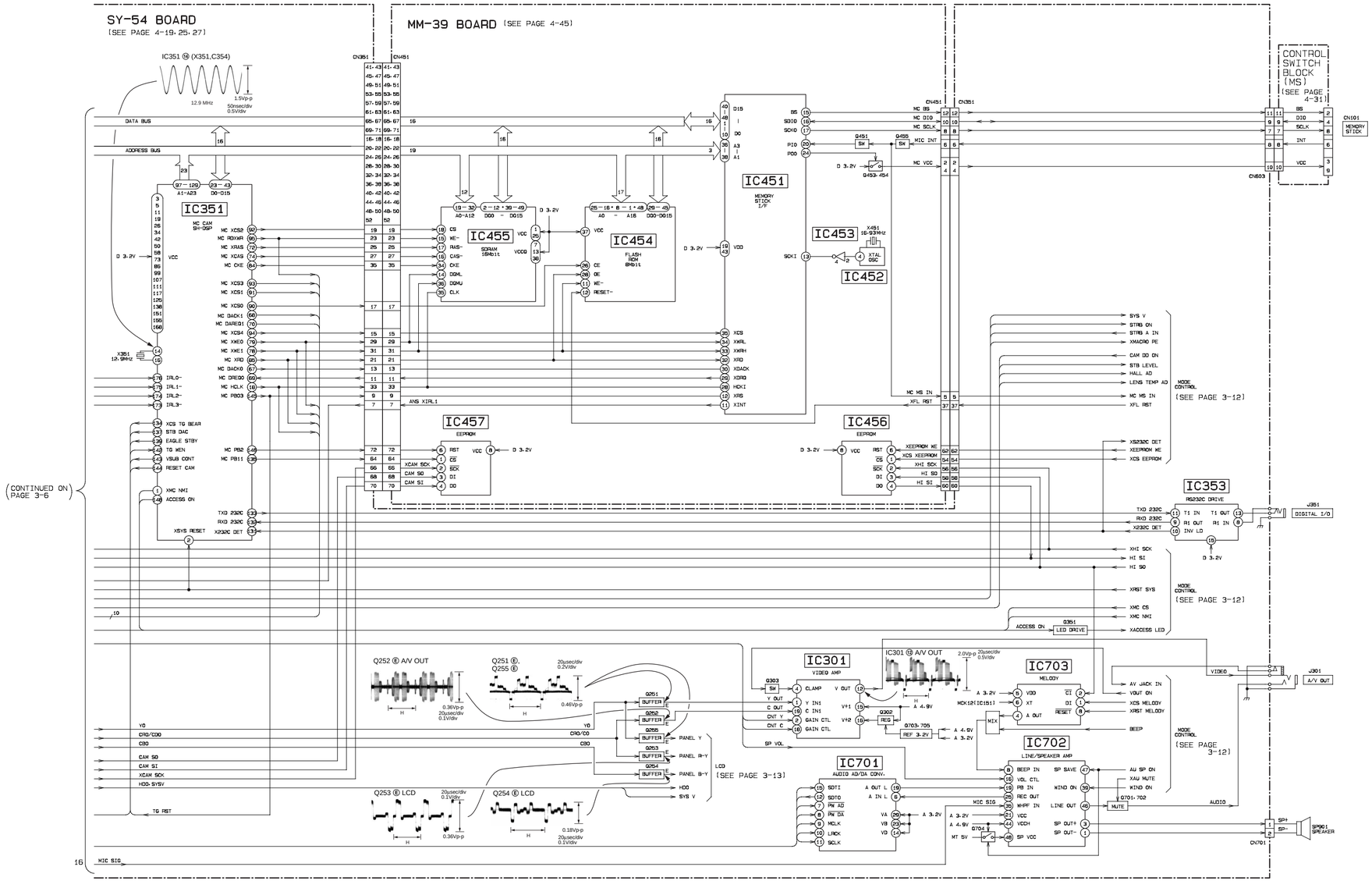
3-1. OVERALL BLOCK DIAGRAM



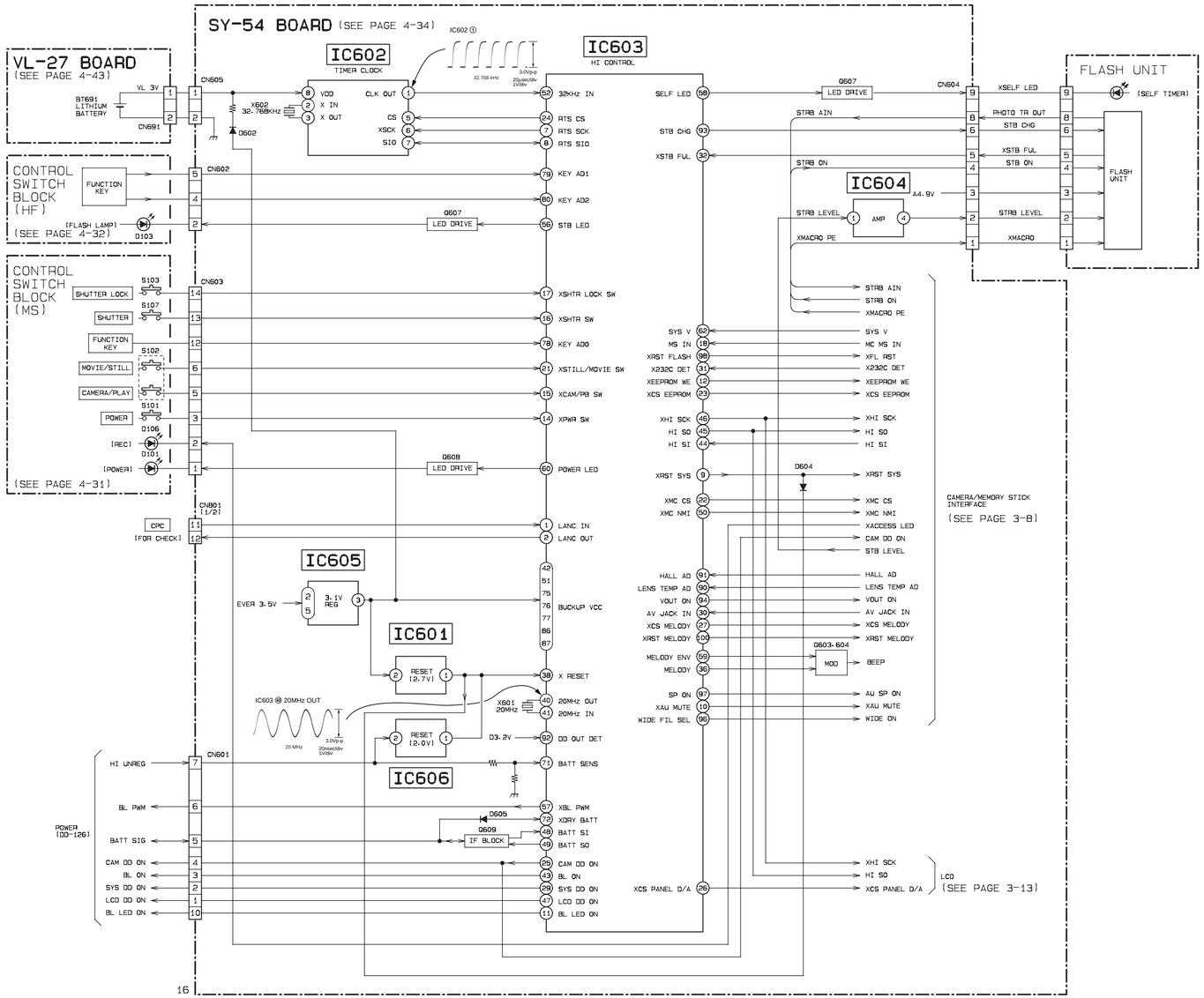
3-2. CAMERA/MEMORY STICK BLOCK DIAGRAM (1)



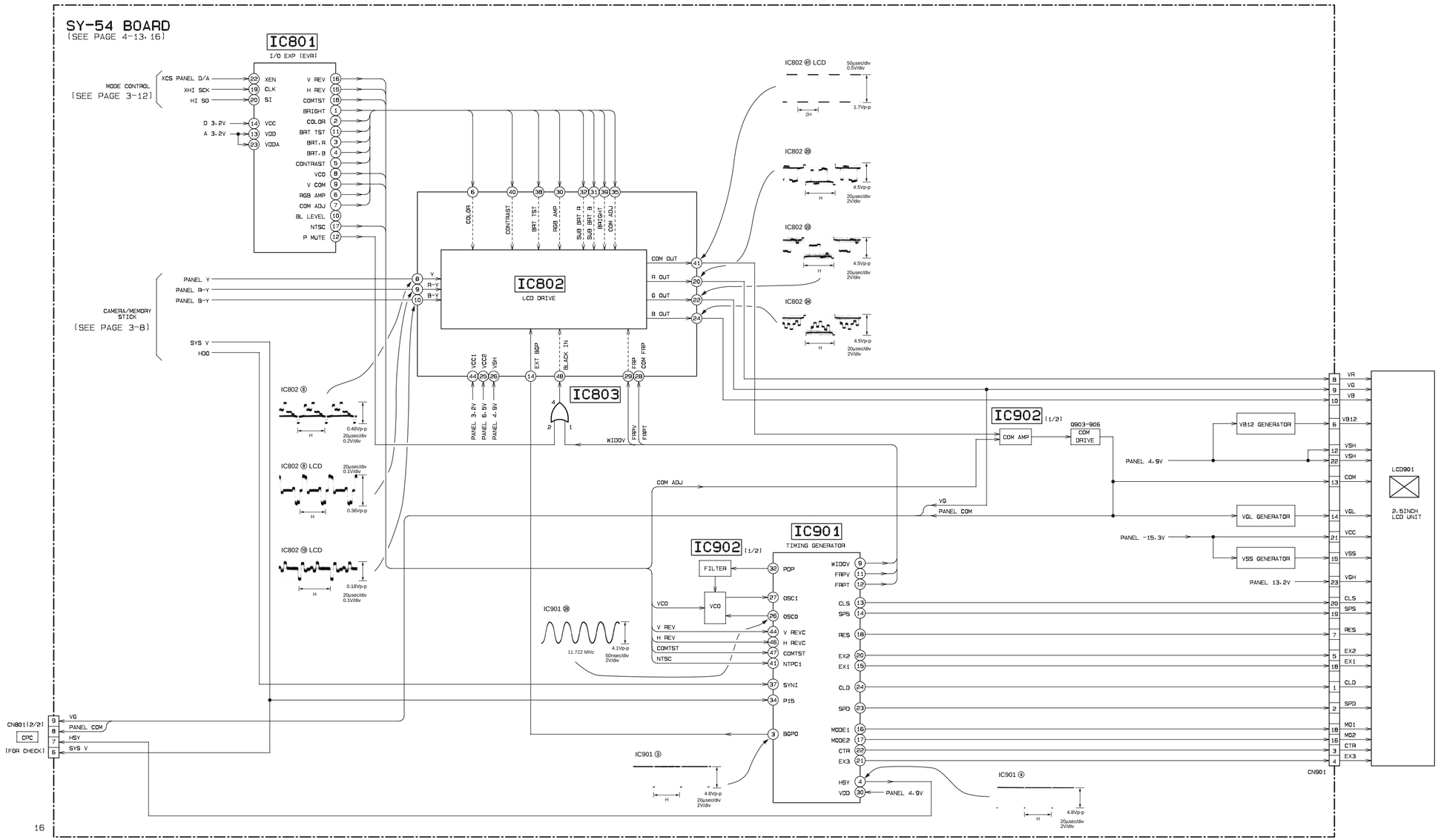
3-3. CAMERA/MEMORY STICK BLOCK DIAGRAM (2)



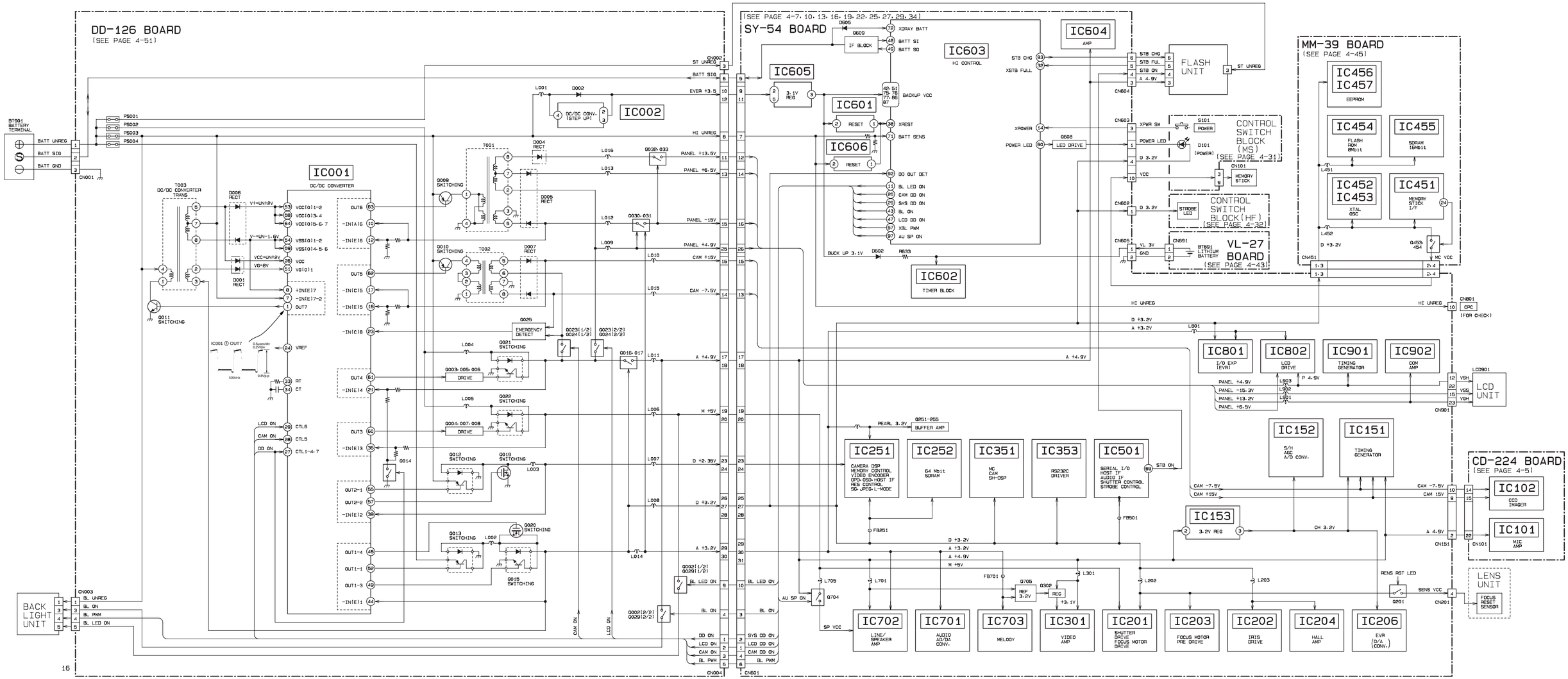
3-4. MODE CONTROL BLOCK DIAGRAM



3-5. LCD BLOCK DIAGRAM

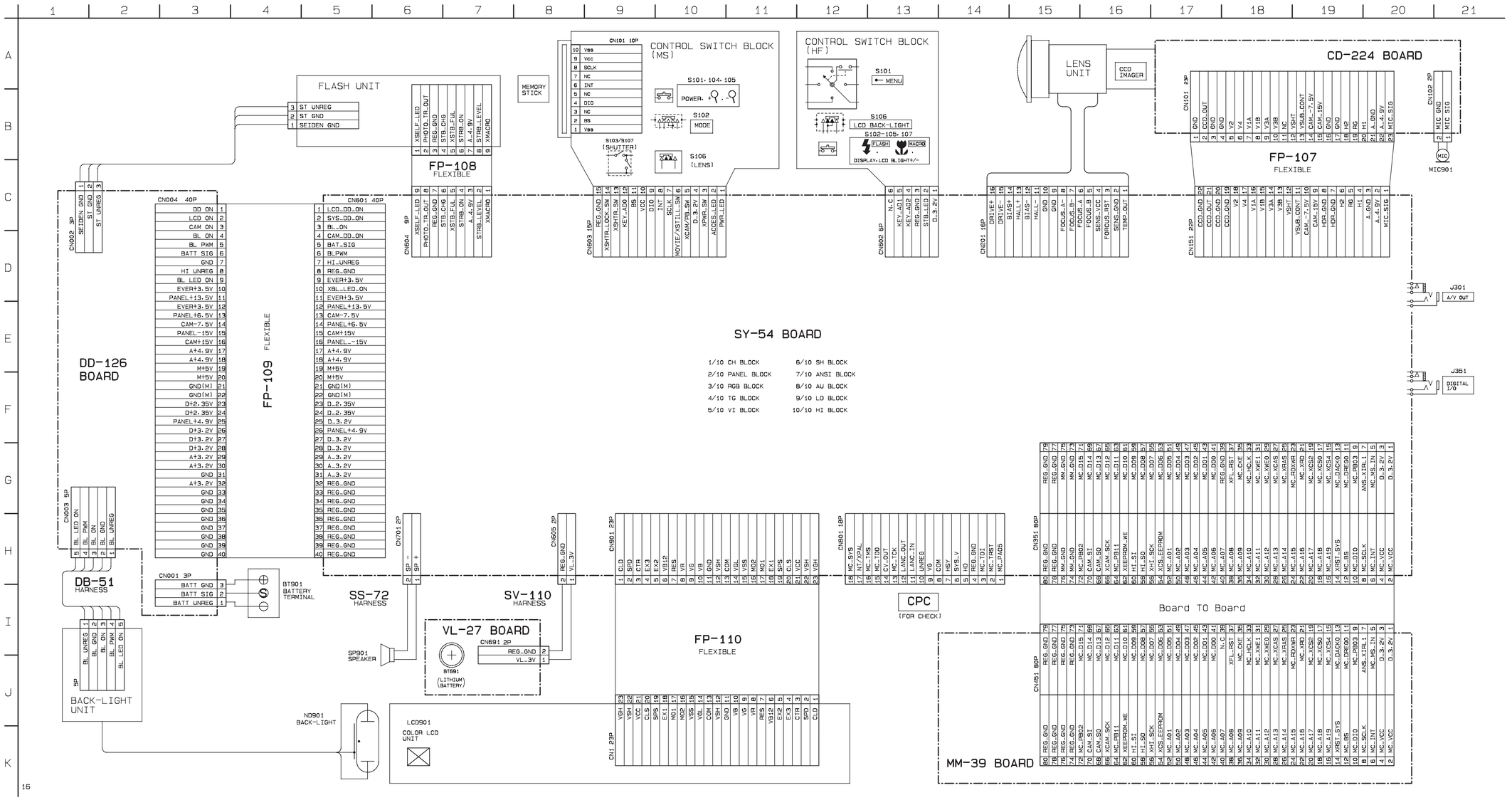


3-6. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



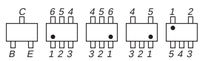
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

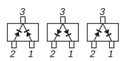
(For printed wiring boards)

- ▒▒: Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.

Transistor

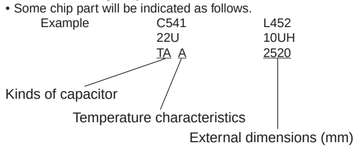


Diode



(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μμF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted. kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.



- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → EDIT PB/XREC → PB/REC
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.
- Circled numbers refer to waveforms.

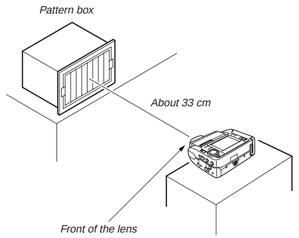
Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.)

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

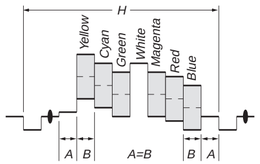


Fig. a (Video output terminal output waveform)

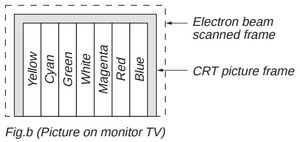
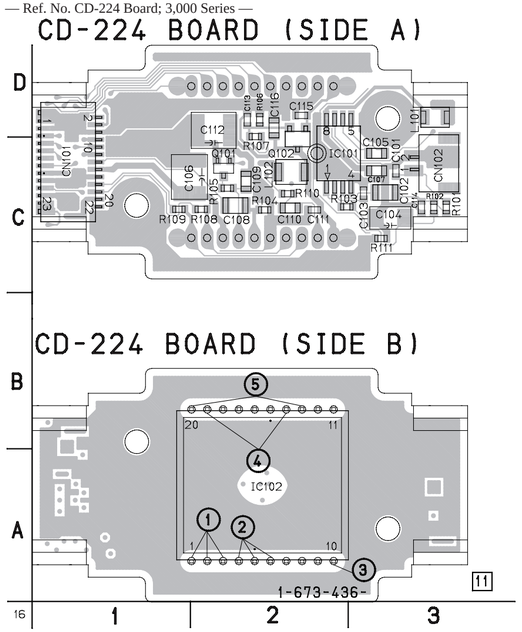


Fig.b (Picture on monitor TV)

When indicating parts by reference number, pleas include the board name.

CD-224 (CCD IMAGER) PRINTED WIRING BOARD

— Ref. No. CD-224 Board; 3,000 Series —



CD-224 BOARD

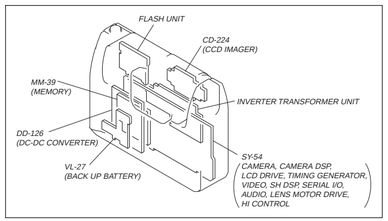
C101	C-3
C102	C-3
C103	C-3
C104	C-3
C105	C-3
C106	C-2
C107	C-3
C108	C-2
C109	C-2
C110	C-2
C111	C-2
C112	D-2
C113	D-2
C114	C-3
C115	D-2
C116	D-2
CN101	C-1
CN102	C-3
IC101	C-3
IC102	A-2
L101	D-3
L102	C-2
Q101	C-2
Q102	C-2
R101	C-3
R102	C-3
R103	C-3
R104	C-2
R105	C-2
R106	D-2
R107	C-2
R108	C-2
R109	C-2
R110	C-2
R111	C-3

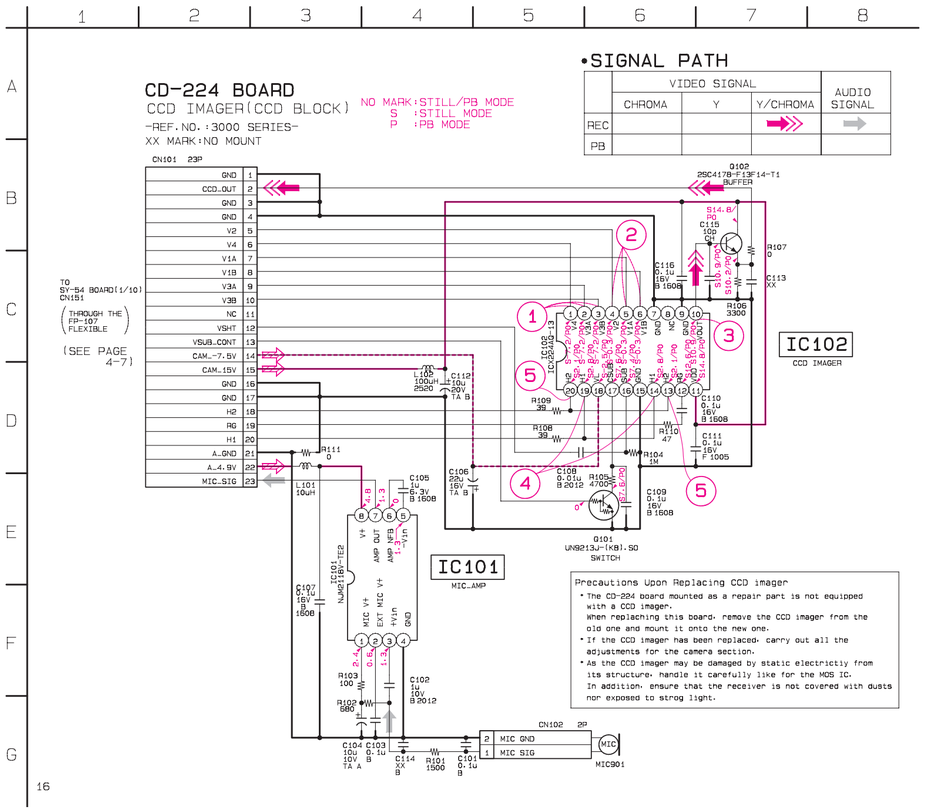
For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

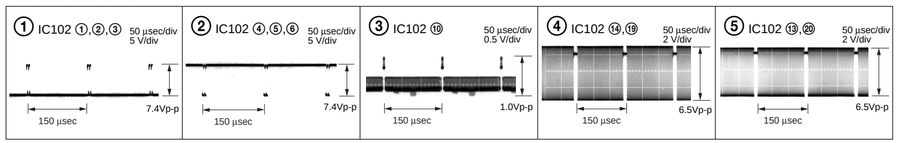
Transistor

There are few cases that the part printed on this diagram isn't mounted in this model.

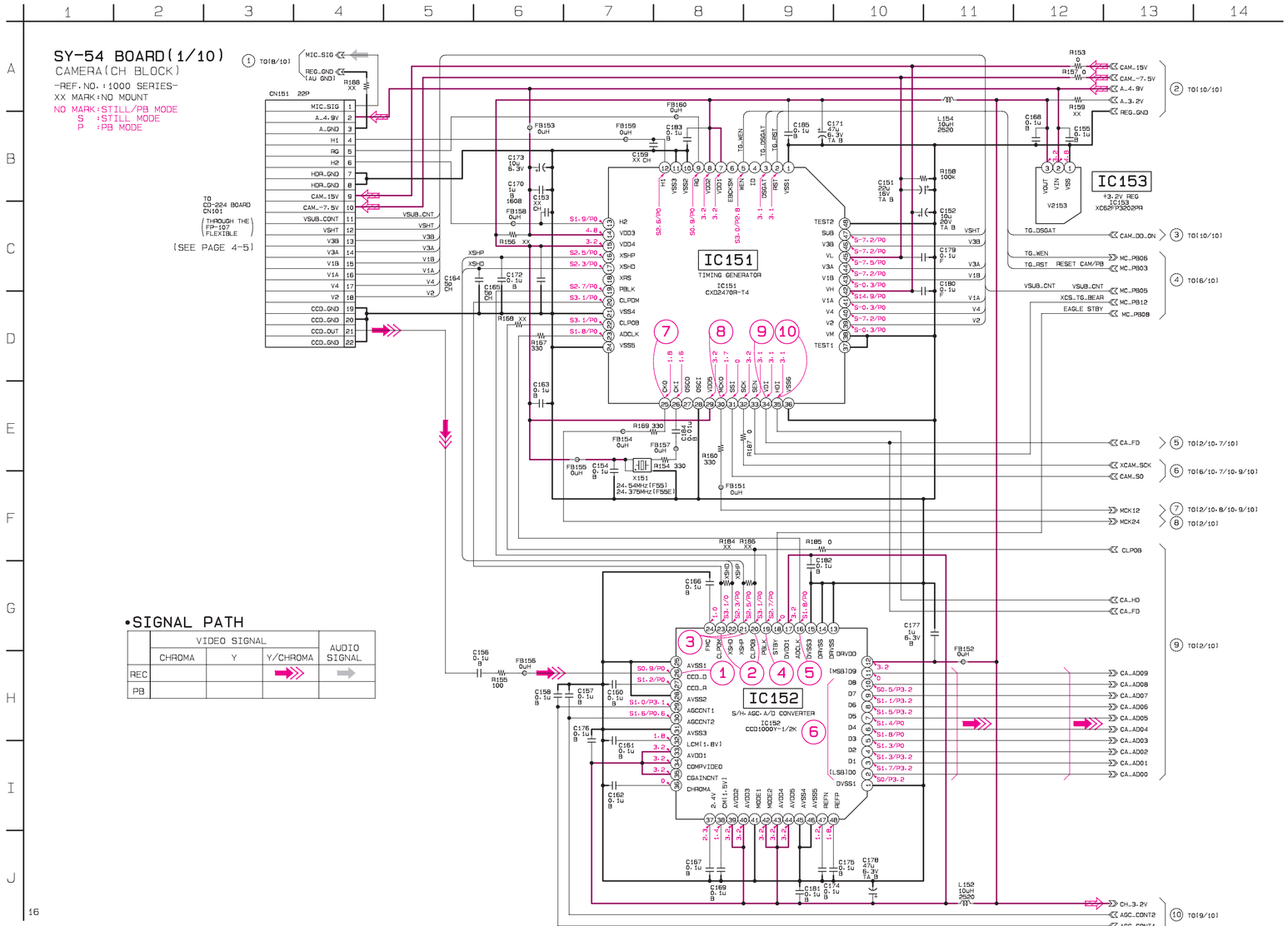

FLASH UNIT
CD-224 (CCD IMAGER)
MM-39 (MEMORY)
INVERTER TRANSFORMER UNIT
DD-126 (DC-DC CONVERTER)
SY-54 (CAMERA, CAMERA DSP, LCD DRIVE, TIMING GENERATOR, VIDEO, SH DSP, SERIAL I/O, AUDIO, LENS MOTOR DRIVE, HI CONTROL
VL-27 (BACK UP BATTERY)


CD-224 BOARD
CCD IMAGER(CCD BLOCK)
NO MARK:STILL/PB MODE
S :STILL MODE
P :PB MODE
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB
IC102
CCD IMAGER
IC101
MIC AMP
Q101
UN9213J-(KB).SO
SWITCH
Q102
2SC4178-F13F14-T1
BUFFER
CN102
MIC
MIC901
Precautions Upon Replacing CCD imager
• The CD-224 board mounted as a repair part is not equipped with a CCD imager. When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
• If the CCD imager has been replaced, carry out all the adjustments for the camera section.
• As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strog light.

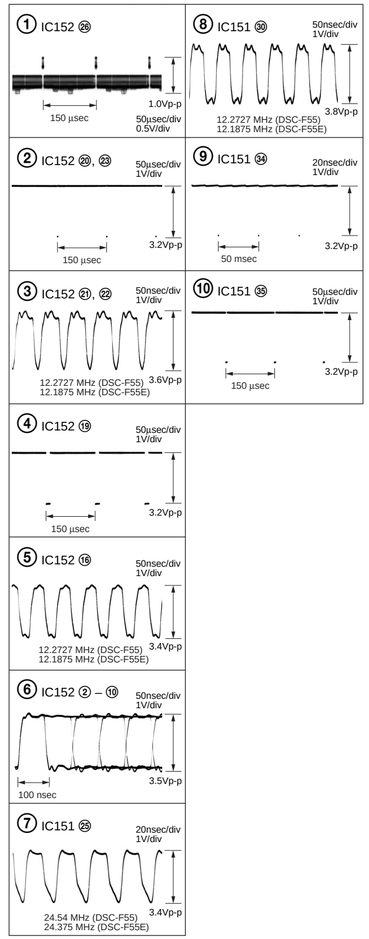
CD-224 BOARD


① IC102 ①,②,③ 50 μsec/div 5 V/div 150 μsec 7.4Vp-p
② IC102 ④,⑤,⑥ 50 μsec/div 5 V/div 150 μsec 7.4Vp-p
③ IC102 ⑩ 50 μsec/div 0.5 V/div 150 μsec 1.0Vp-p
④ IC102 ⑭,⑱ 50 μsec/div 2 V/div 150 μsec 6.5Vp-p
⑤ IC102 ⑬,⑳ 50 μsec/div 2 V/div 150 μsec 6.5Vp-p

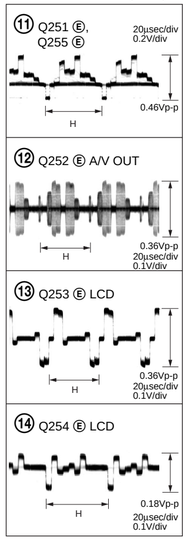
For schematic diagram
• Refer to page 4-37 for printed wiring board.



SY-54 BOARD (1/10)

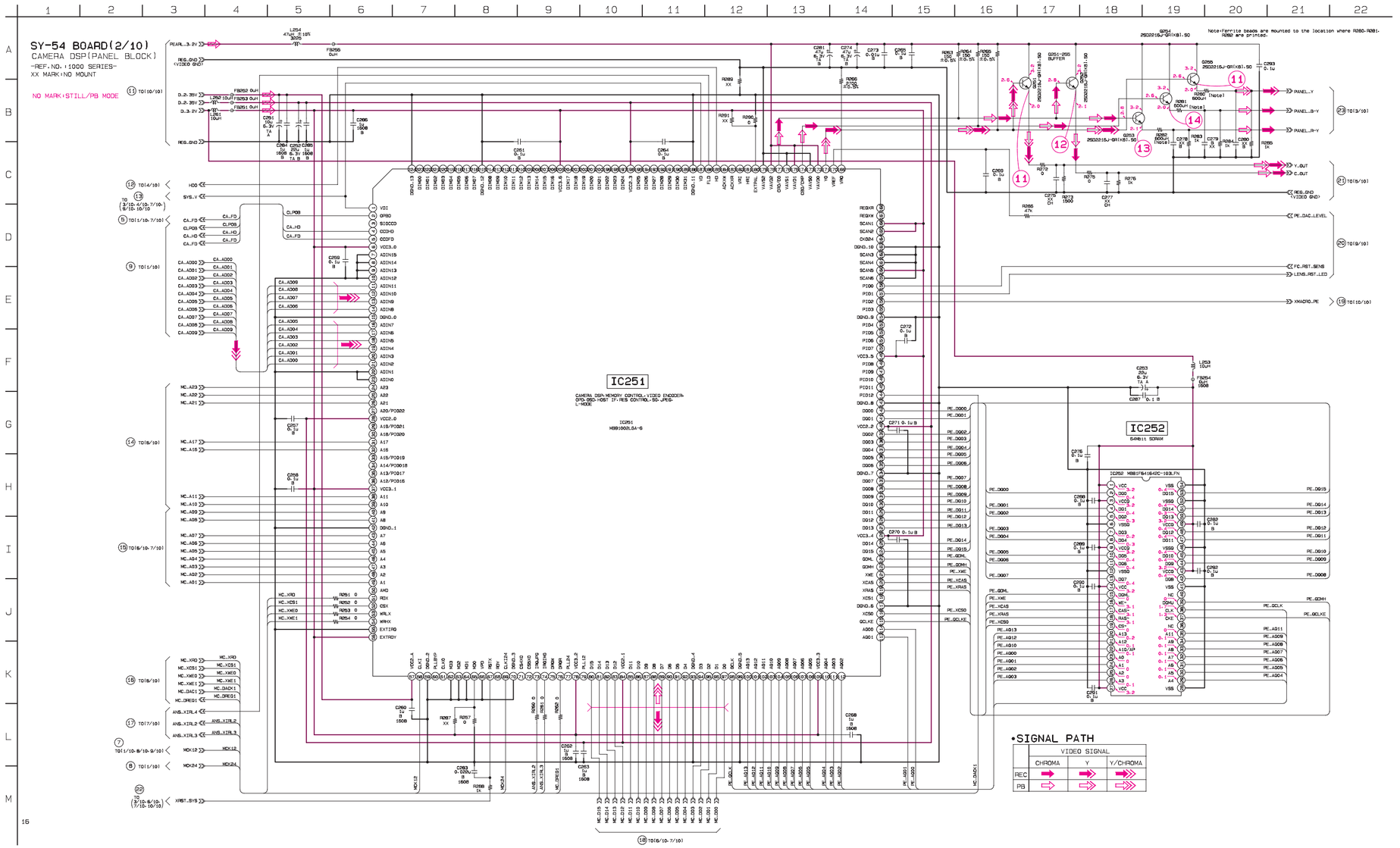


SY-54 BOARD (2/10)

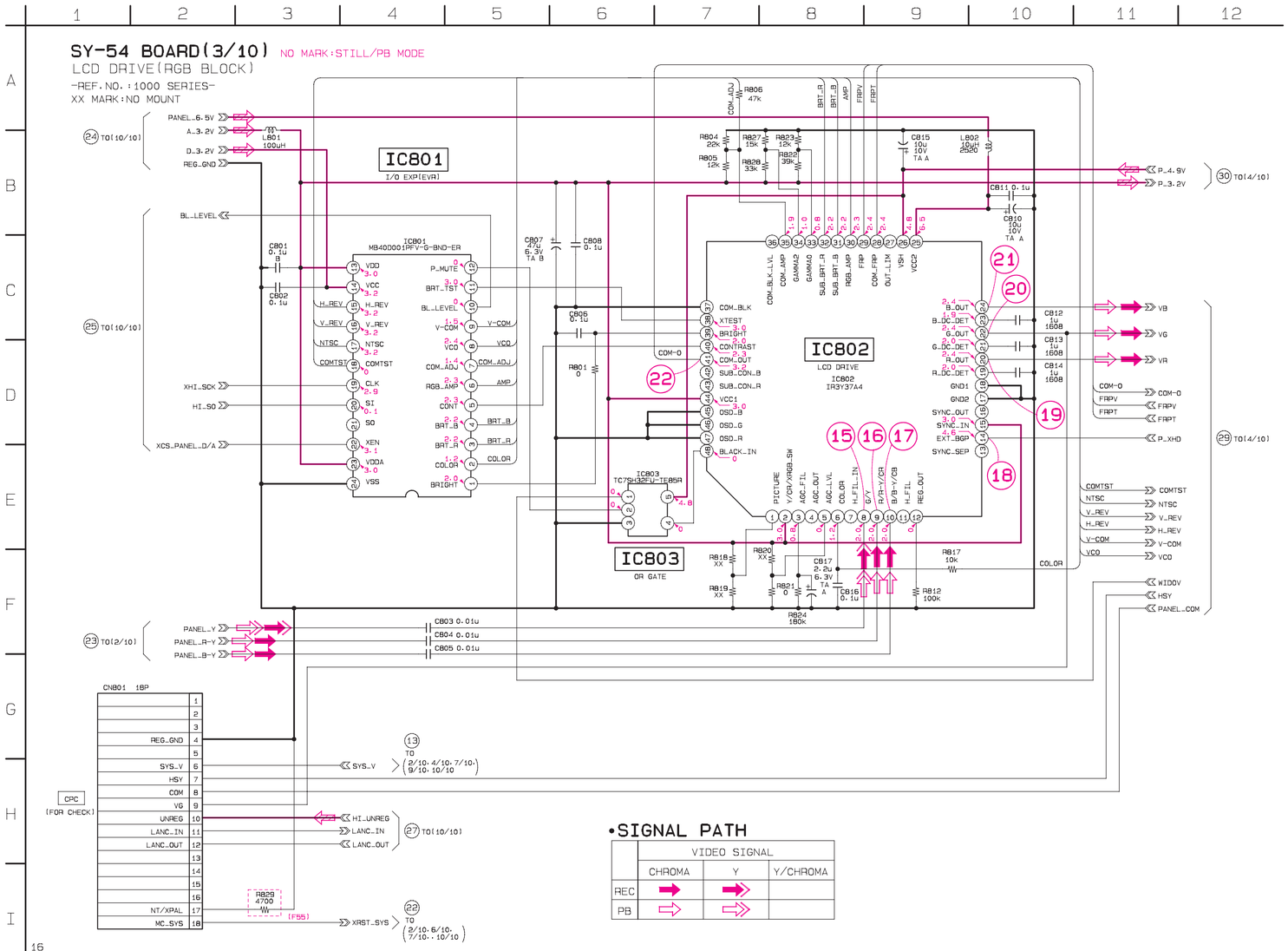


For schematic diagram

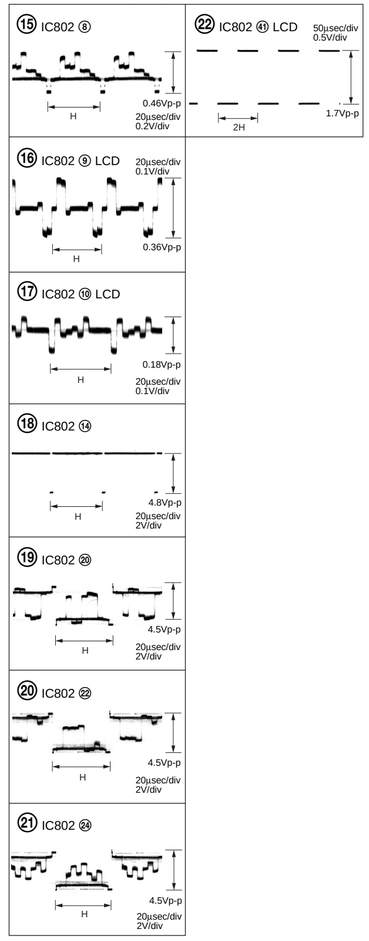
• Refer to page 4-37 for printed wiring board.



For schematic diagram
• Refer to page 4-37 for printed wiring board.



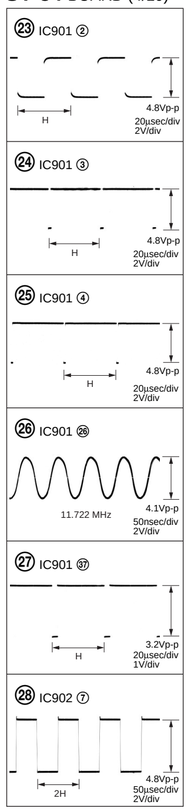
SY-54 BOARD (3/10)

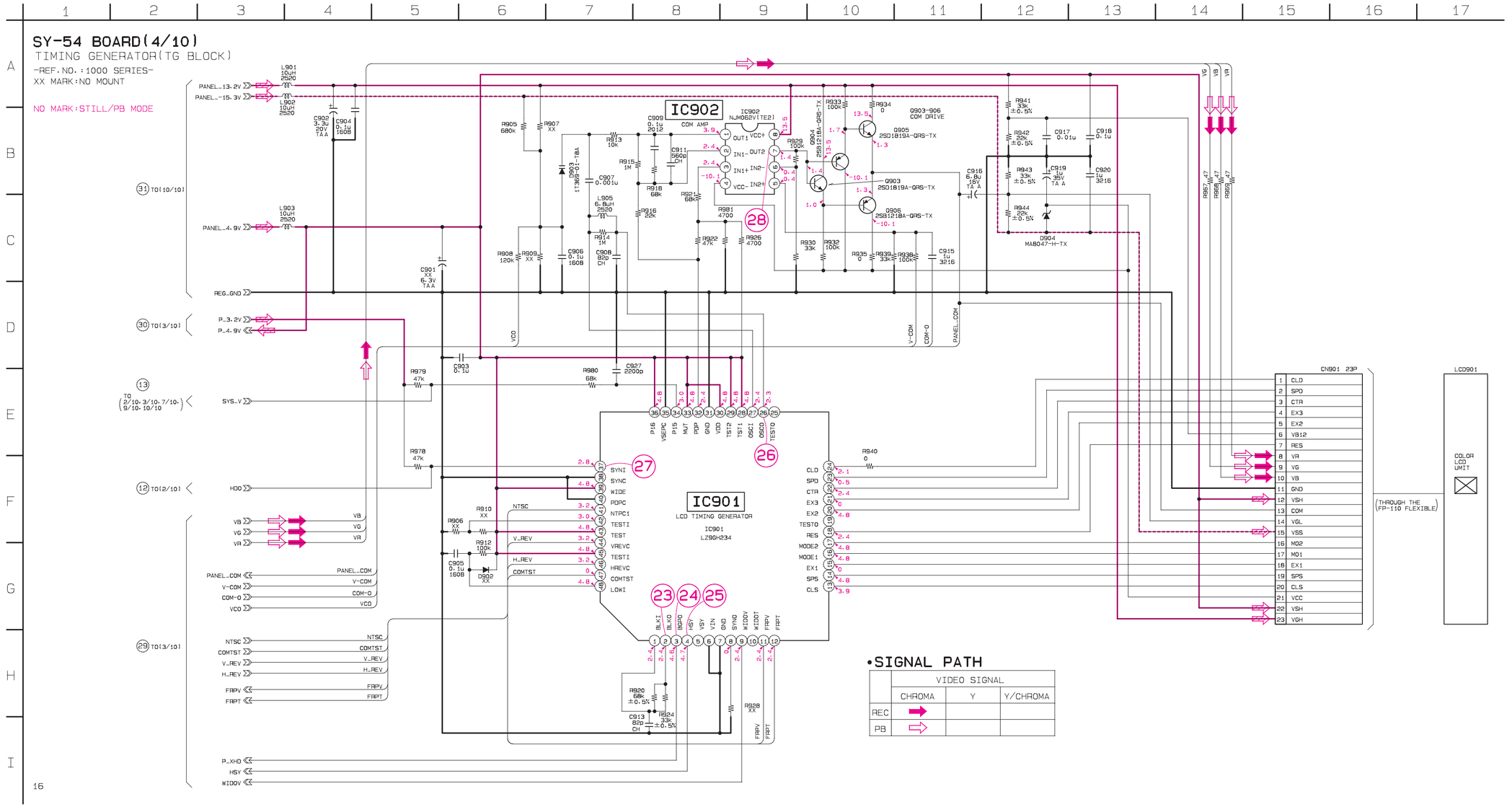


LCD DRIVE
SY-54 (3/10)

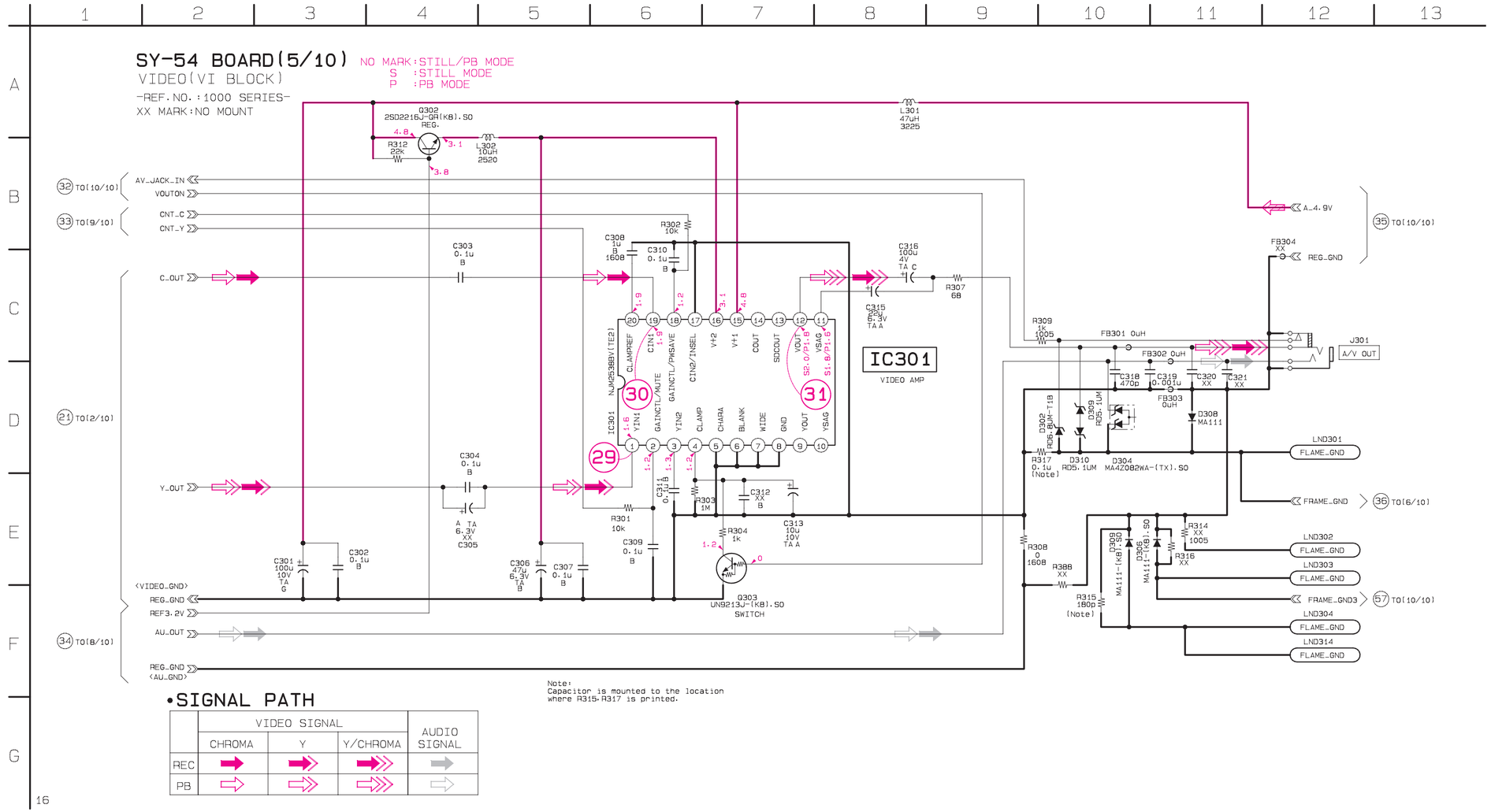
For schematic diagram
• Refer to page 4-37 for printed wiring board.

SY-54 BOARD (4/10)





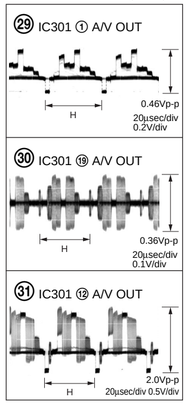
For schematic diagram
• Refer to page 4-37 for printed wiring board.



•SIGNAL PATH

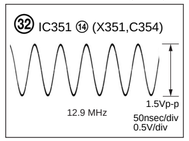
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

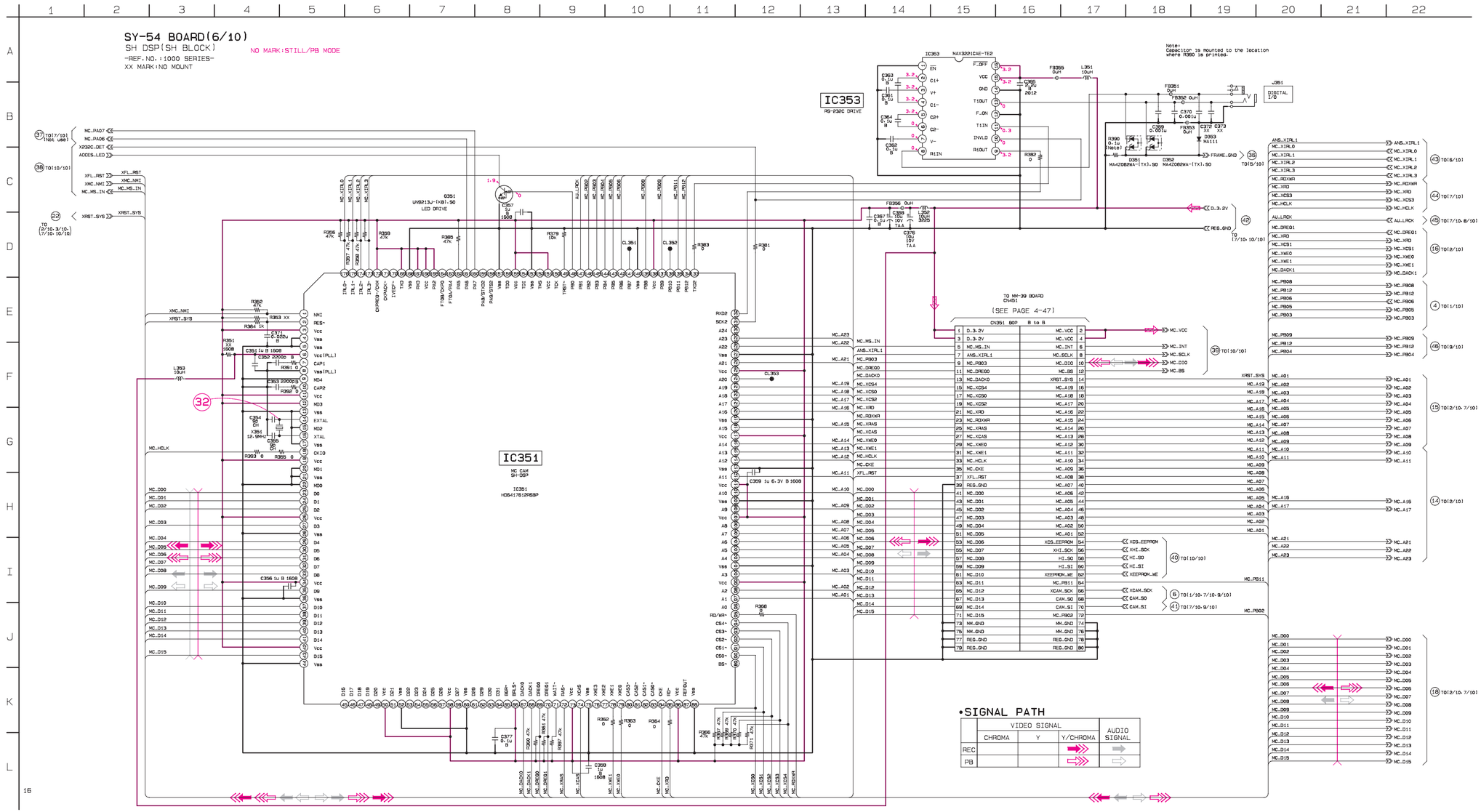
SY-54 BOARD (5/10)



For schematic diagram
• Refer to page 4-37 for printed wiring board.

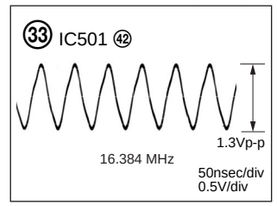
SY-54 BOARD (6/10)

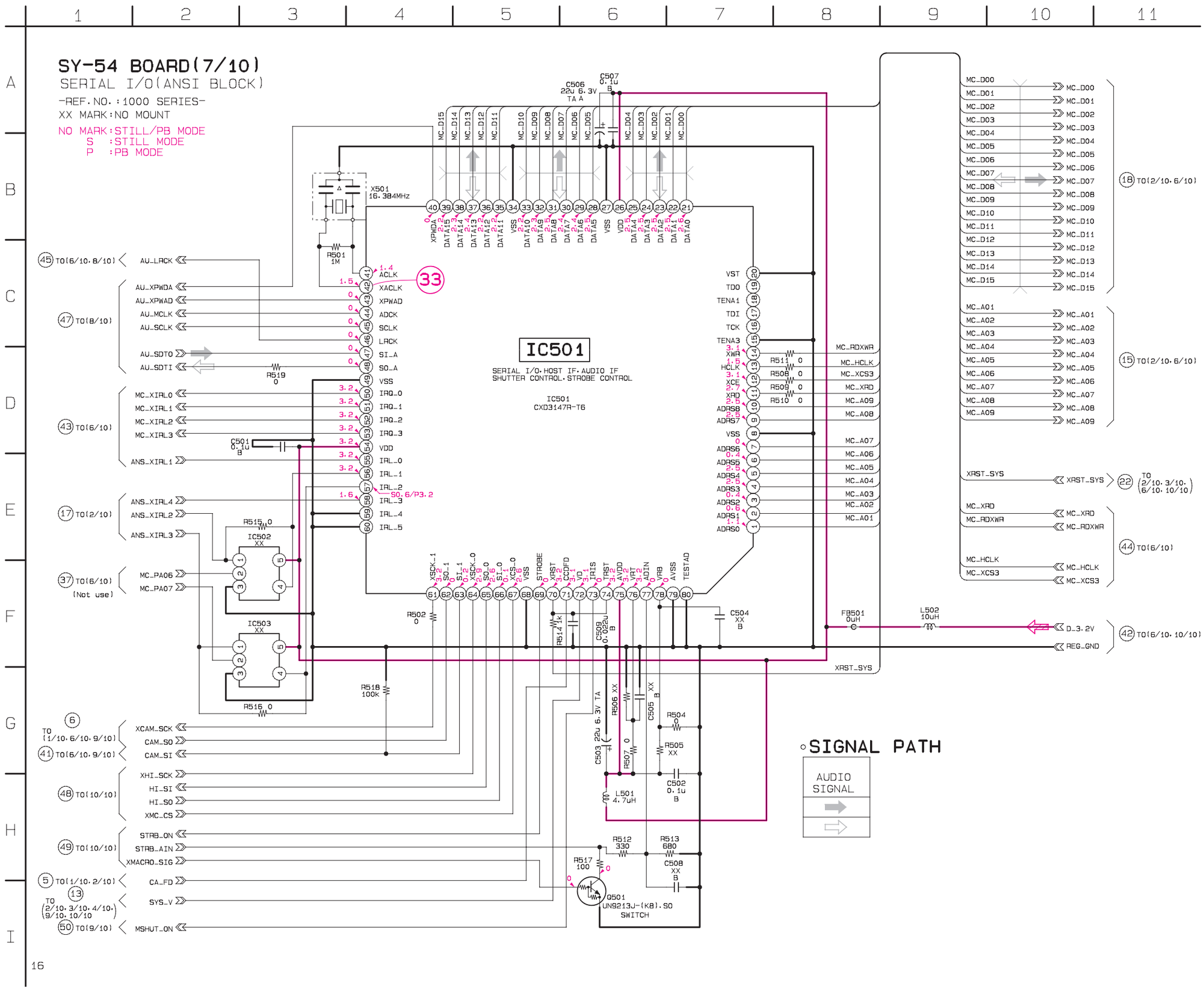




For schematic diagram
• Refer to page 4-37 for printed wiring board.

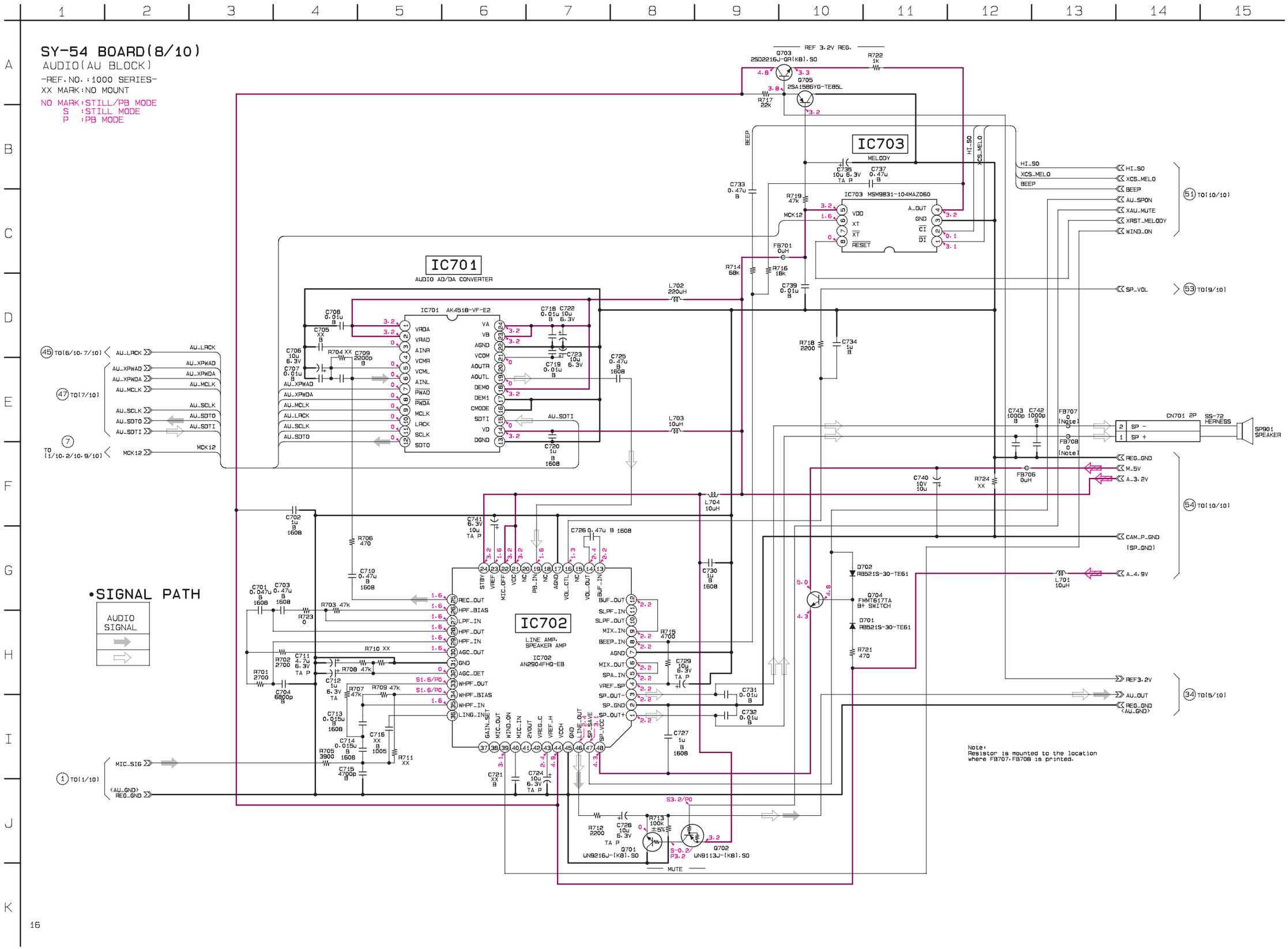
SY-54 BOARD (7/10)



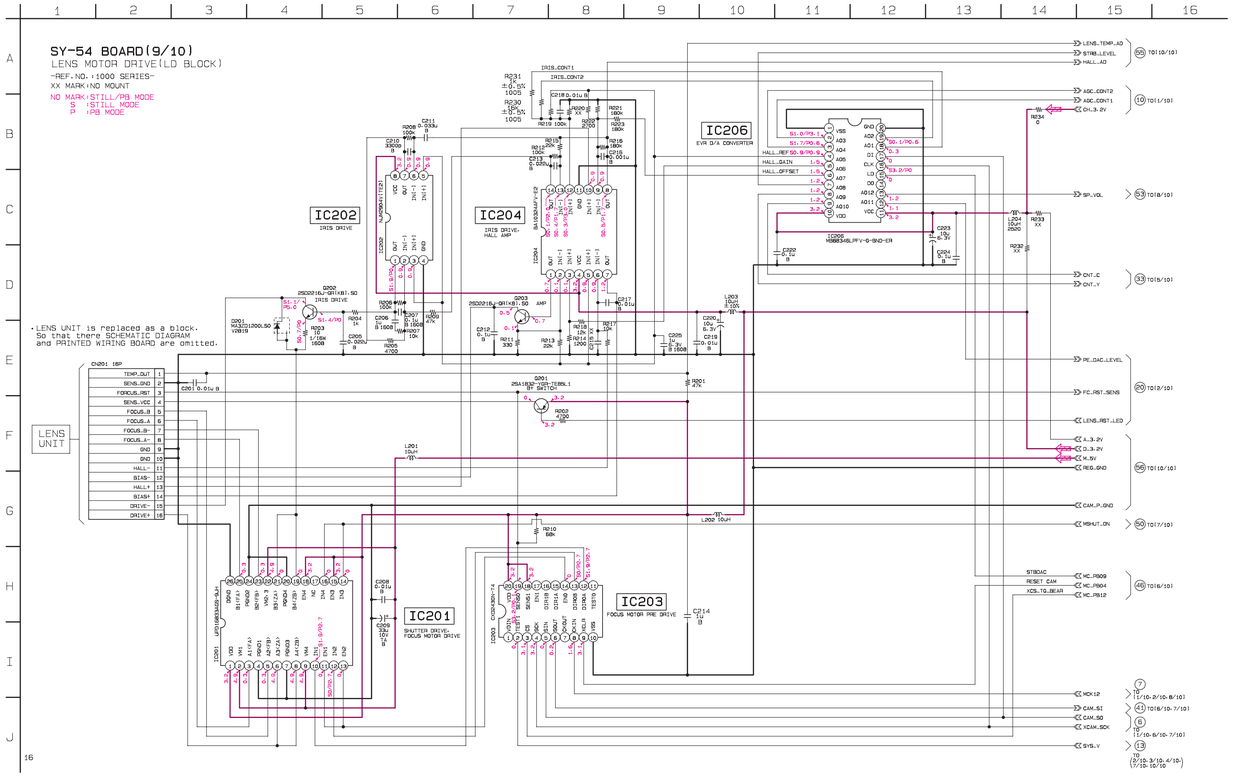


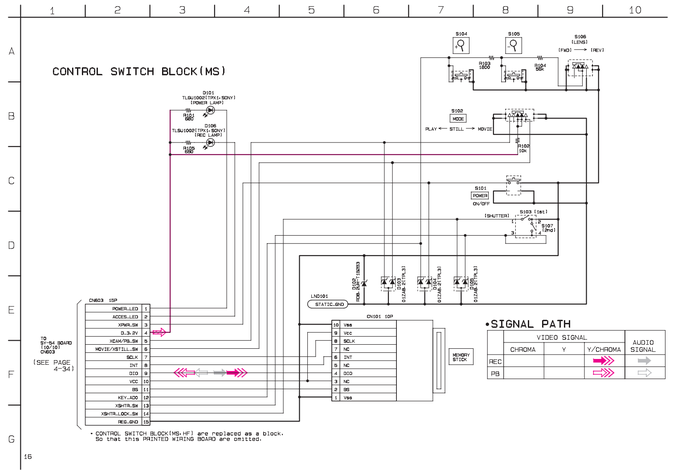
For schematic diagram

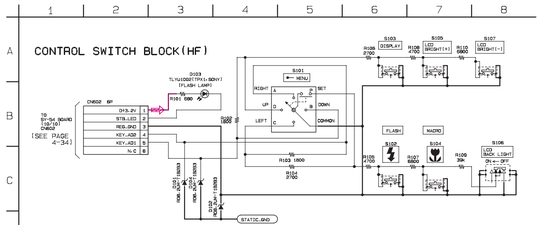
• Refer to page 4-37 for printed wiring board.



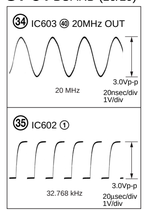
For schematic diagram
• Refer to page 4-37 for printed wiring board.

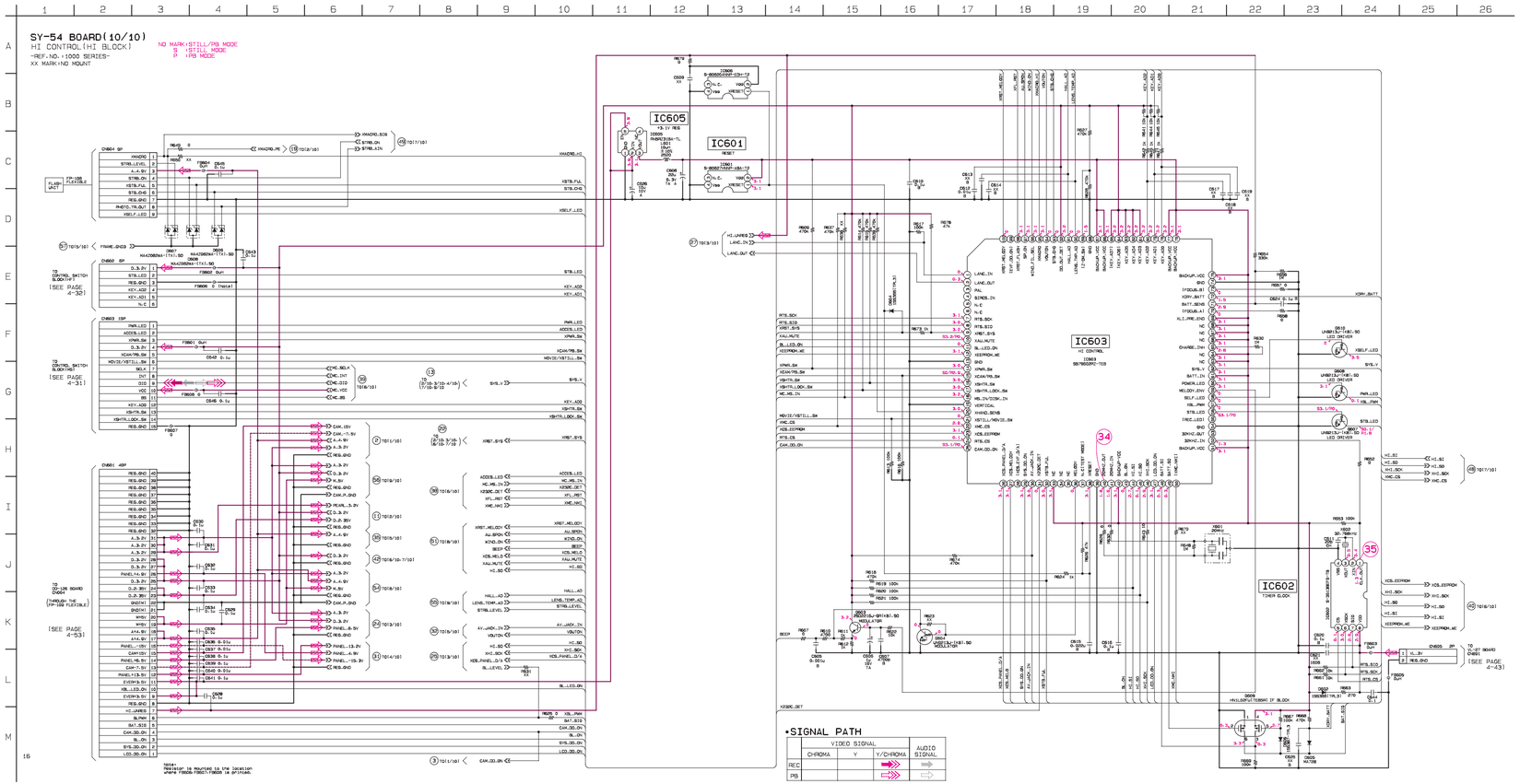





CONTROL SWITCH BLOCK(HF)
CN602 8P
• CONTROL SWITCH BLOCK(HF) is replaced as ablock. So that this PRINTED WIRING BOARD is omitted.

SY-54 BOARD (10/10)

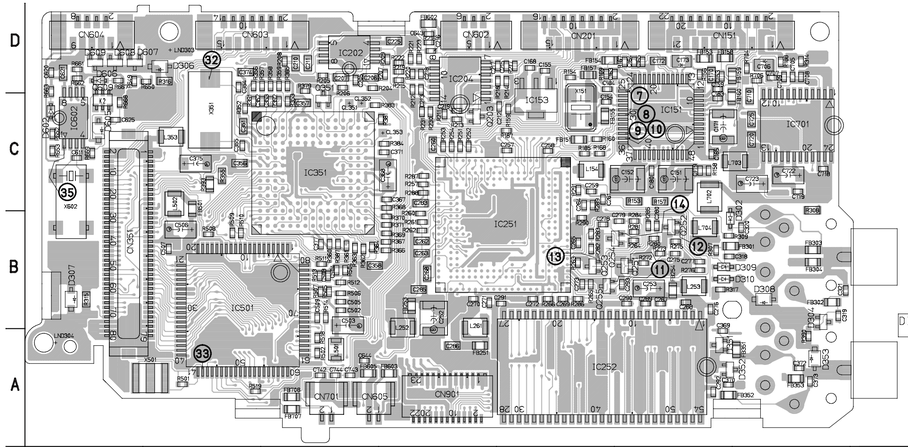




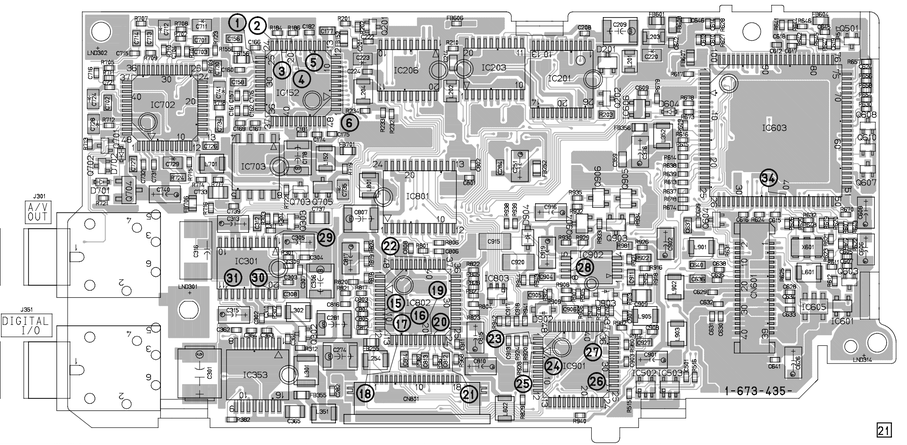
SY-54 (CAMERA, CAMERA DSP, LCD DRIVE, TIMING GENERATOR, VIDEO, SH DSP, SERIAL I/O, AUDIO, LENS MOTOR DRIVE, HI CONTROL) PRINTED WIRING BOARD

— Ref. No. SY-54 Board; 1,000 Series —

SY-54 BOARD(SIDE A)



SY-54 BOARD(SIDE B)

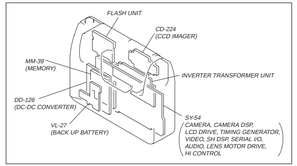


For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor Diode

There are few cases that the part printed on this diagram isn't mounted in this model.

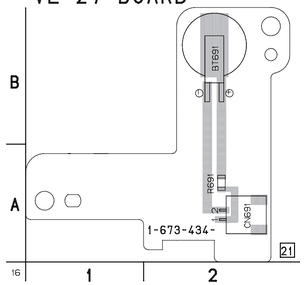


SY-54 BOARD

C151	C-6	C284	C-12	C629	B-14	C911	B-13	IC153	C-5	Q904	B-13	R314	D-7	R645	D-15	R938	B-12
C152	C-6	C285	B-4	C630	B-14	C913	A-12	IC201	D-13	Q905	C-13	R316	D-2	R646	D-15	R939	B-12
C153	D-6	C286	A-4	C631	B-14	C915	B-12	IC202	D-3	Q906	C-13	R317	B-6	R647	D-15	R940	A-13
C154	C-5	C287	B-6	C632	B-14	C916	C-13	IC203	D-12			R351	C-2	R648	B-15	R942	B-12
C155	D-5	C288	B-6	C633	B-15	C917	B-12	IC204	D-4	R153	C-6	R352	C-2	R649	D-1	R943	B-12
C156	D-10	C289	B-6	C634	B-15	C918	B-12	IC206	D-11	R154	D-5	R353	C-3	R650	D-2	R944	B-12
C157	C-10	C290	B-6	C635	B-14	C919	B-13	IC251	B-5	R155	D-10	R355	C-2	R653	C-1	R967	A-12
C158	D-10	C291	B-5	C636	B-14	C920	B-12	IC252	A-5	R156	D-6	R356	D-2	R654	C-15	R968	A-12
C159	D-6	C292	A-6	C637	B-14	C927	A-13	IC301	B-10	R157	C-6	R357	D-3	R656	D-15	R969	A-11
C160	D-10	C293	B-6	C638	B-14			IC351	C-3	R158	C-6	R358	D-3	R657	D-15	R978	B-13
C161	C-10	C301	A-10	C639	B-14	CN151	D-6	IC353	A-10	R159	C-5	R359	D-3	R658	D-15	R979	B-13
C162	C-10	C302	B-10	C640	B-14	CN201	D-5	IC501	B-2	R160	C-5	R360	B-3	R661	D-1	R980	A-13
C163	D-6	C303	B-10	C641	A-14	CN251	B-1	IC502	A-13	R167	D-6	R361	B-3	R662	C-1	R981	B-13
C164	D-6	C304	B-11	C642	D-14	CN601	B-14	IC503	A-14	R168	C-5	R362	B-3	R663	D-1	R982	B-13
C165	D-6	C305	B-10	C643	D-4	CN602	D-4	IC601	B-15	R169	D-5	R363	B-3	R667	D-1		
C166	D-10	C306	B-11	C644	A-3	CN603	D-2	IC602	C-1	R184	D-10	R364	B-3	R668	C-1	X151	C-5
C167	C-10	C307	B-10	C645	D-15	CN604	D-1	IC603	C-15	R185	C-5	R366	B-4	R669	C-1	X351	C-2
C168	D-5	C308	B-10	C646	D-14	CN605	A-3	IC605	B-15	R186	D-10	R367	B-4	R670	B-15	X501	A-2
C169	C-10	C309	B-10	C701	D-10	CN701	A-3	IC606	C-13	R187	C-5	R368	C-4	R673	C-14	X601	B-15
C170	D-6	C310	B-10	C702	C-9	CN801	A-11	IC701	C-7	R188	D-7	R369	B-4	R674	B-14	X602	C-1
C171	C-6	C311	B-10	C703	D-10	CN901	A-4	IC702	C-9	R201	D-11	R370	B-4	R678	C-14		
C172	D-6	C312	B-10	C704	D-9			IC703	C-10	R202	D-11	R371	B-4	R679	C-13		
C173	D-6	C313	B-10	C705	D-7	D201	D-13	IC801	C-11	R203	C-13	R379	C-3	R701	D-10		
C174	C-11	C315	B-10	C706	D-7	D302	B-7	IC802	B-11	R204	D-3	R381	C-4	R702	D-9		
C175	D-11	C316	B-10	C707	D-7	D303	B-6	IC803	B-12	R205	D-3	R382	A-10	R703	D-10		
C176	C-10	C318	B-7	C708	D-7	D304	B-7	IC901	A-13	R206	D-3	R383	C-3	R704	D-7		
C177	D-11	C319	B-7	C709	D-7	D306	D-2	IC902	B-12	R207	D-4	R384	C-4	R705	D-9		
C178	C-10	C320	B-7	C710	C-7	D307	B-1			R208	D-3	R385	C-3	R706	D-9		
C179	C-6	C321	B-7	C711	D-10	D308	B-7	J301	B-9	R209	D-4	R386	C-4	R707	D-9		
C180	C-6	C351	C-2	C712	D-9	D351	A-6	J351	A-9	R210	D-12	R387	B-3	R708	D-9		
C181	D-10	C352	C-2	C713	D-9	D352	A-7			R211	A-4	R388	C-3	R709	D-9		
C182	D-11	C353	C-3	C714	D-9	D353	A-7	L152	C-11	R212	C-4	R390	A-7	R710	D-9		
C183	C-6	C354	D-2	C715	D-9	D602	C-1	L154	C-5	R213	C-4	R391	C-2	R711	D-9		
C184	C-6	C355	D-2	C716	D-9	D604	C-14	L201	D-13	R214	D-5	R392	C-3	R712	C-9		
C185	C-6	C356	C-2	C718	C-7	D605	C-1	L202	D-12	R215	D-4	R393	C-2	R713	C-9		
C201	D-11	C357	C-3	C719	C-7	D606	D-1	L203	D-13	R216	D-4	R501	A-2	R714	C-10		
C205	B-3	C358	B-3	C720	C-7	D607	D-1	L204	D-11	R217	D-4	R502	A-3	R715	C-10		
C206	D-3	C359	C-13	C721	D-9	D608	D-1	L252	B-6	R218	D-5	R504	B-3	R716	C-10		
C207	D-3	C361	A-10	C722	C-7	D609	D-1	L253	B-6	R219	D-4	R505	B-3	R717	C-10		
C208	D-13	C362	A-10	C723	C-7	D701	C-9	L254	A-11	R220	D-4	R506	B-3	R718	C-10		
C209	D-13	C363	A-10	C724	C-9	D702	C-9	L261	B-4	R221	D-4	R507	B-3	R719	C-11		
C210	D-3	C364	A-10	C725	C-7	D903	B-13	L301	A-11	R222	D-4	R508	B-2	R721	C-9		
C211	D-3	C365	A-10	C726	C-10	D904	B-12	L302	B-10	R223	D-4	R509	B-2	R722	C-10		
C212	C-5	C367	C-4	C727	C-9			L351	A-11	R230	C-4	R510	B-2	R723	D-10		
C213	C-4	C368	C-4	C728	C-9	FB151	C-5	L352	C-14	R231	C-4	R511	B-3	R724	C-9		
C214	D-12	C369	B-6	C729	C-9	FB152	D-11	L353	C-2	R232	C-11	R512	B-3	R801	B-12		
C215	D-5	C370	A-6	C730	D-10	FB153	D-6	L501	A-3	R233	C-11	R513	B-3	R804	B-12		
C216	D-4	C371	C-4	C731	C-9	FB154	D-5	L502	C-2	R234	C-11	R515	A-13	R805	B-12		
C217	D-5	C372	A-7	C732	C-9	FB155	C-5	L601	B-15	R251	C-4	R516	A-14	R806	B-12		
C218	D-13	C373	A-7	C733	C-10	FB156	D-10	L701	C-10	R252	C-4	R517	D-15	R812	A-11		
C219	C-4	C374	D-2	C734	C-10	FB157	D-5	L702	C-6	R253	C-4	R518	A-3	R817	B-11		
C220	D-13	C375	C-2	C735	C-11	FB158	D-6	L703	C-7	R254	C-4	R519	A-2	R818	B-11		
C222	D-11	C376	C-13	C736	C-11	FB159	D-6	L704	B-6	R257	C-4	R607	B-15	R819	B-11		
C223	D-11	C377	B-3	C739	C-10	FB160	C-6	L801	C-11	R260	B-4	R609	C-14	R820	B-11		
C224	D-11	C501	A-14	C740	C-9	FB251	A-4	L802	A-12	R261	B-4	R610	B-15	R821	B-11		
C225	D-4	C502	B-3	C741	C-10	FB252	C-12	L901	B-14	R262	B-4	R611	B-15	R822	B-12		
C251	C-12	C503	B-3	C742	A-3	FB253	B-4	L902	B-14	R263	B-5	R612	B-15	R823	B-12		
C252	B-4	C504	B-3	C743	A-3	FB254	B-6	L903	A-14	R264	B-6	R613	C-14	R824	B-11		
C253	B-6	C505	B-3	C744	A-3	FB255	A-11	L905	B-13	R265	B-5	R614	C-14	R827	B-12		
C257	C-5	C506	B-2	C801	C-12	FB301	B-7			R266	B-5	R615	C-14	R829	A-12		
C258	C-5	C507	B-2	C802	C-12	FB302	B-7	Q201	D-11	R272	B-6	R616	C-14	R905	B-13		
C259	C-5	C508	B-2	C803	B-11	FB303	B-7	Q202	C-13	R273	B-6	R617	C-14	R906	B-13		
C260	C-4	C509	B-3	C804	B-11	FB304	B-7	Q203	C-4	R275	B-6	R618	B-14	R907	B-13		
C261	C-5	C605	B-15	C805	B-11	FB351	A-7	Q251	B-6	R276	B-6	R619	B-15	R908	B-13		
C262	B-4	C606	B-15	C806	B-12	FB352	A-7	Q252	B-6	R280	B-6	R620	B-15	R909	B-13		
C263	B-4	C607	B-15	C807	B-11	FB353	A-7	Q253	B-5	R281	B-6	R621	B-15	R910	B-13		
C264	C-5	C608	B-15	C808	B-11	FB355	A-10	Q254	B-6	R282	B-5	R622	B-15	R912	B-13		
C265	B-5	C609	D-13	C810	A-12	FB356	C-13	Q255	B-5	R283	B-5	R623	B-15	R913	B-13		
C268	B-4	C610	D-14	C811	A-12	FB501	B-2	Q302	A-11	R284	B-6	R624	B-15	R914	A-13		
C269	B-5	C611	C-1	C812	A-12	FB601	D-13	Q303	B-10	R285	B-6	R625	B-15	R915	B-13		
C270	B-4	C612	D-15	C813	A-12	FB602	D-4	Q351	C-3	R286	B-5	R626	B-15	R916	B-13		
C271	B-4	C613	D-14	C814	A-11	FB603	A-4	Q501	D-15	R287	C-4	R627	D-14	R918	B-13		
C272	B-5	C614	D-14	C815	A-12	FB604	D-15	Q603	B-15	R288	C-4	R628	D-14	R920	A-12		
C273	B-5	C615	B-14	C816	B-11	FB605	A-3	Q604	B-14	R289	C-5	R629	B-15	R921	B-13		
C274	A-11	C616	B-14	C817	B-11	FB606	D-12	Q607	C-15	R290	B-5	R630	C-15	R922	B-13		
C275	B-6	C617	D-15	C901	A-13	FB607	D-14	Q608	C-15	R291	C-5	R631	B-14	R924	A-12		
C276	B-6	C618	D-15	C902	B-14	FB608	D-14	Q609	C-1	R301	B-10	R632	B-15	R926	B-13		
C277	B-6	C619	D-15	C903	A-13	FB701	C-11	Q610	C-15	R302	B-10	R637	C-14	R928	A-12		
C278	B-5	C620	D-1	C904	B-13	FB706	C-10	Q701	C-9	R303	B-10	R638	C-14	R929	B-13		
C279	B-6	C621	D-1	C905	B-12	FB707	A-3	Q702	C-9	R304	B-10	R639	C-14	R930	B-13		
C280	B-6	C624	D-15	C906	B-13	FB708	A-3	Q703	C-10	R307	B-6	R641	D-15	R932	C-13		
C281	B-11	C625	C-1	C907	B-13			Q704	C-9	R308	B-7	R642	D-15	R933	B-13		
C282	A-11	C626	A-15	C908	A-13	IC151	C-6	Q705	C-11	R309	B-7	R643	B-15	R934	B-13		
C283	C-4	C628	B-15	C909	B-13	IC152	D-10	Q903	B-13	R312	A-10	R644	D-15	R935	C-13		

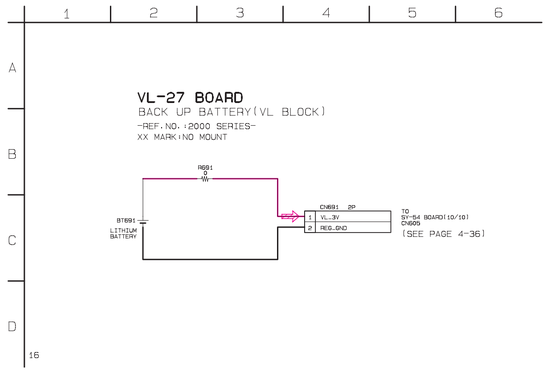
VL-27 (BACK UP BATTERY) PRINTED WIRING BOARD

— Ref. No. VL-27 Board; 2,000 Series —



VL-27 BOARD

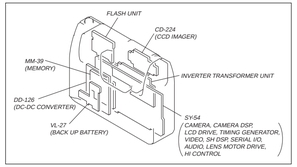
BT691 B-2
CN691 A-2
R691 A-2



For printed wiring board

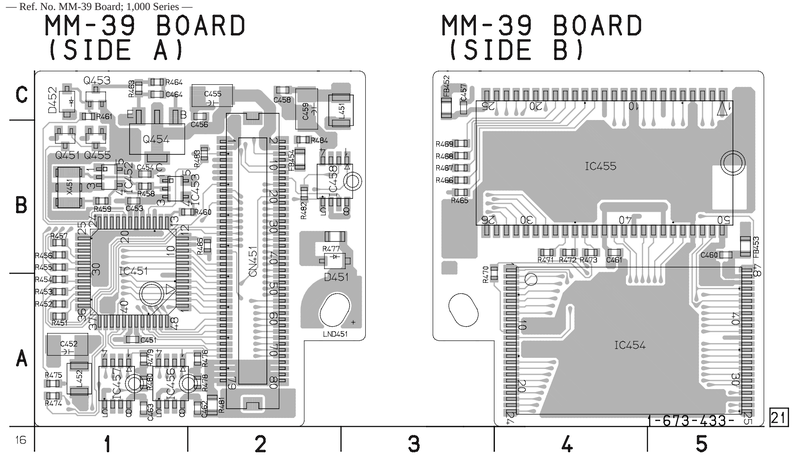
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

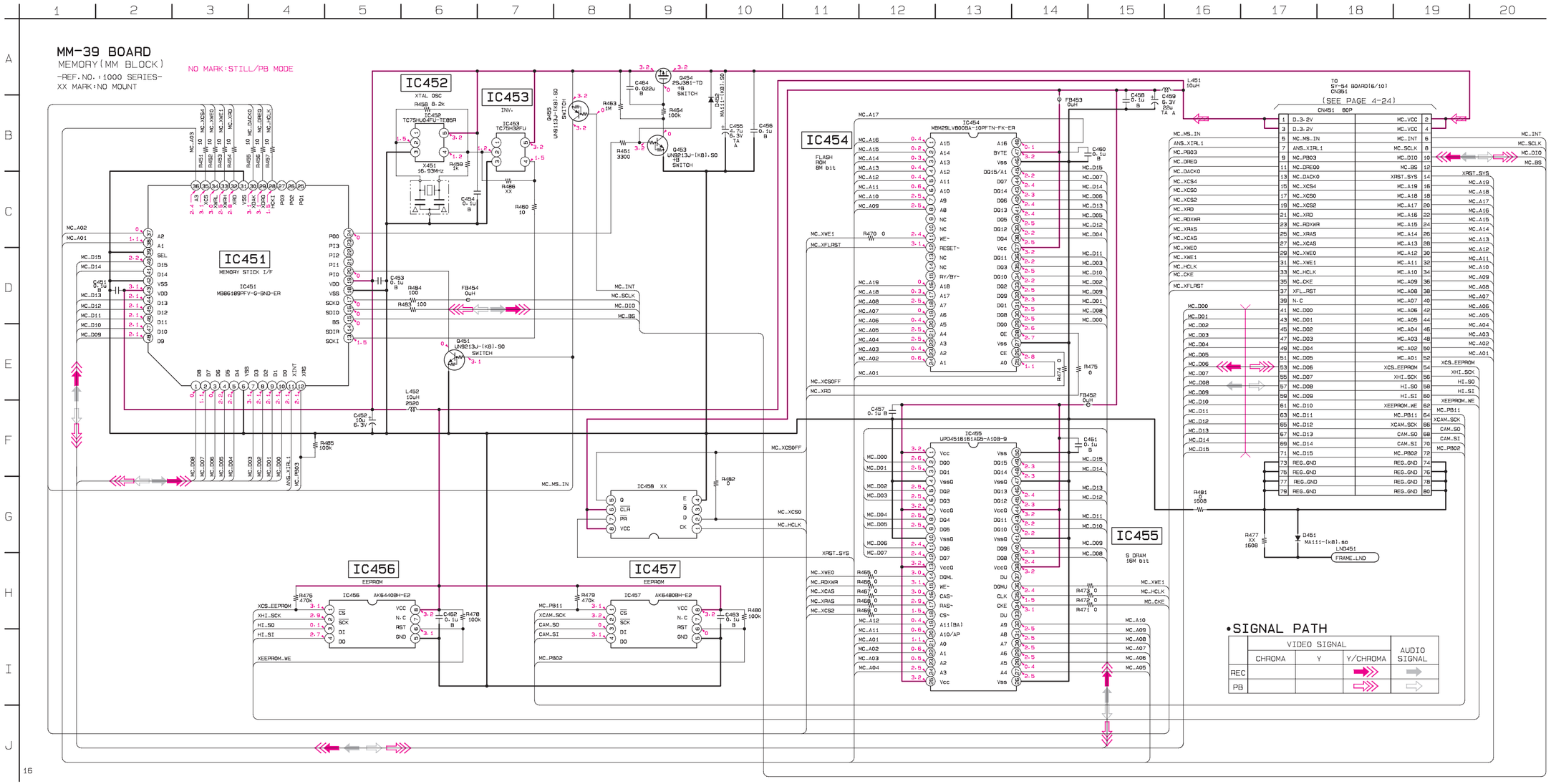
There are few cases that the part printed on this diagram isn't mounted in this model.



MM-39 (MEMORY) PRINTED WIRING BOARD

— Ref. No. MM-39 Board; 1,000 Series —



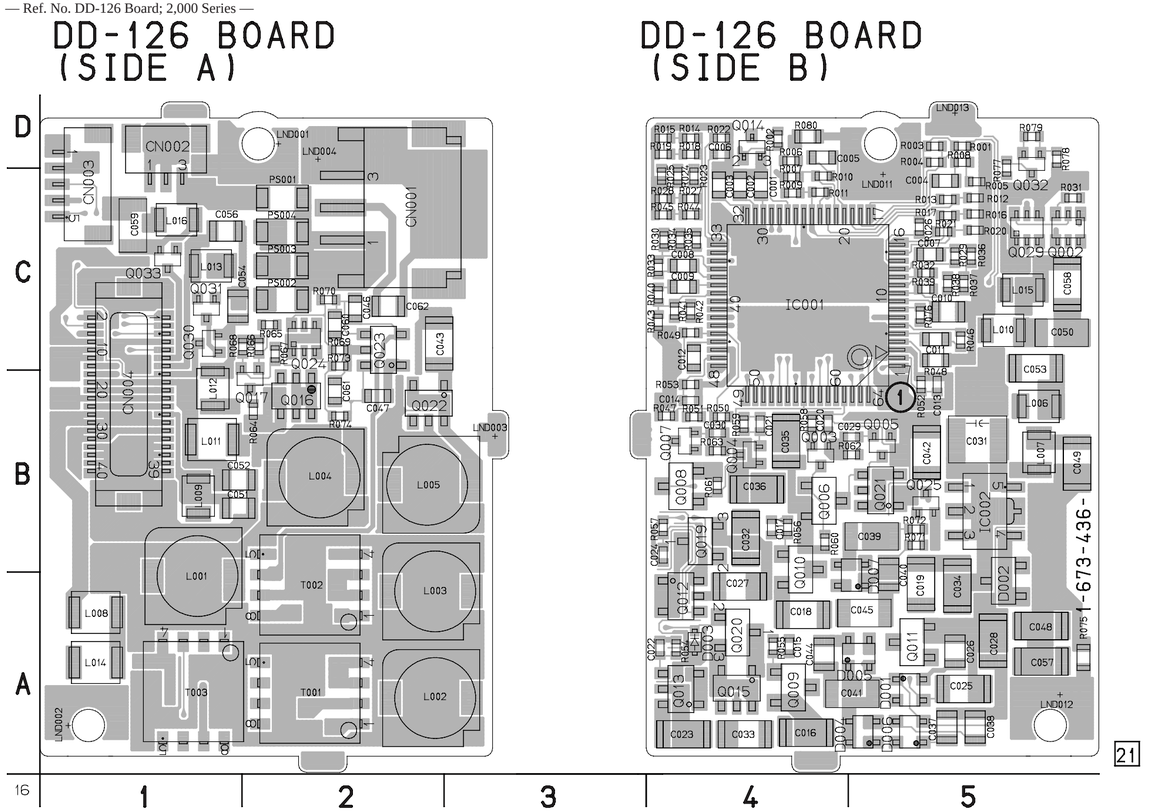

MM-39 BOARD
MEMORY (MM BLOCK)
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT
NO MARK:STILL/PB MODE
IC451
MEMORY STICK I/F
IC452
XTAL OSC
IC453
INV.
IC454
FLASH ROM 8M bit
IC455
S DRAM 16M bit
IC456
EEPROM
IC457
EEPROM
IC458 XX
TO SY-54 BOARD(6/10) CN351
(SEE PAGE 4-24)
CN451 80P
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB

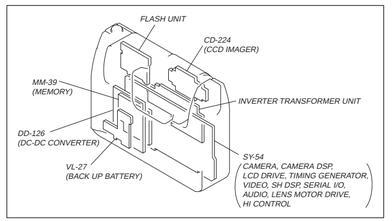
DD-126 BOARD

C001	C-4	IC001	C-4	R020	C-5
C002	C-4	IC002	B-5	R021	C-5
C003	C-4			R022	D-4
C004	C-5	L001	A-1	R023	C-4
C005	D-4	L002	A-3	R024	C-4
C006	D-4	L003	A-3	R025	C-4
C007	C-5	L004	B-2	R026	C-5
C008	C-4	L005	B-3	R027	C-4
C009	C-4	L006	B-5	R028	C-4
C010	C-5	L007	B-5	R029	C-5
C011	C-5	L008	A-1	R030	C-4
C012	C-4	L009	B-1	R031	C-5
C013	B-5	L010	C-5	R032	C-5
C014	B-4	L011	B-1	R033	C-4
C015	A-4	L012	B-1	R034	C-4
C016	A-4	L013	C-1	R035	C-4
C017	B-4	L014	A-1	R036	C-5
C018	A-4	L015	C-5	R037	C-5
C019	A-5	L016	C-1	R038	C-5
C020	B-4			R039	C-5
C021	B-4	PS001	C-2	R040	C-4
C022	A-4	PS002	C-2	R041	C-4
C023	A-4	PS003	C-2	R042	C-4
C024	B-4	PS004	C-2	R043	C-4
C025	A-5			R044	C-4
C026	A-5	Q002	C-5	R045	C-4
C027	A-4	Q003	B-4	R046	C-5
C028	A-5	Q004	B-4	R047	B-4
C029	B-4	Q005	B-5	R048	C-5
C030	B-4	Q006	B-4	R049	C-4
C031	B-5	Q007	B-4	R050	B-4
C032	B-4	Q008	B-4	R051	B-4
C033	A-4	Q009	A-4	R052	B-5
C034	A-5	Q010	A-4	R053	B-4
C035	B-4	Q011	A-5	R054	A-4
C036	B-4	Q012	A-4	R055	A-4
C037	A-5	Q013	A-4	R056	B-4
C038	A-5	Q014	D-4	R057	B-4
C039	B-5	Q015	A-4	R058	B-4
C040	A-5	Q016	B-2	R059	B-4
C041	A-5	Q017	B-2	R060	B-4
C042	B-5	Q019	B-4	R061	B-4
C043	C-3	Q020	A-4	R062	B-4
C044	A-4	Q021	B-5	R063	B-4
C045	A-5	Q022	B-2	R064	B-2
C046	C-2	Q023	C-2	R065	C-2
C047	B-2	Q024	C-2	R066	C-2
C048	A-5	Q025	B-5	R067	C-2
C049	B-5	Q029	C-5	R068	C-2
C050	C-5	Q030	C-1	R069	C-2
C051	B-2	Q031	C-1	R070	C-2
C052	B-2	Q032	C-5	R071	B-5
C053	B-5	Q033	C-1	R072	B-5
C054	C-2			R073	C-2
C056	C-1	R001	D-5	R074	B-2
C057	A-5	R002	D-4	R075	A-5
C058	C-5	R003	D-5	R076	C-5
C059	C-1	R004	C-5	R077	C-5
C060	C-2	R005	C-5	R078	D-5
C061	B-2	R006	D-4	R079	D-5
		R007	C-4	R080	D-4
CN001	C-2	R008	C-5		
CN002	D-1	R009	C-4	T001	A-2
CN003	C-1	R010	C-4	T002	A-2
CN004	B-1	R011	C-4	T003	A-1
		R012	C-5		
D001	A-5	R013	C-5		
D002	A-5	R014	D-4		
D003	A-4	R015	D-4		
D004	A-5	R016	C-5		
D005	A-5	R017	C-5		
D006	A-5	R018	D-4		
D007	A-4	R019	D-4		

DD-126 (DC-DC CONVERTER) PRINTED WIRING BOARD

— Ref. No. DD-126 Board; 2,000 Series —





For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor

Diode

There are few cases that the part printed on this diagram isn't mounted in this model.

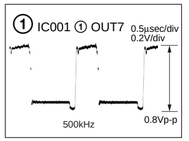
DD-126 BOARD

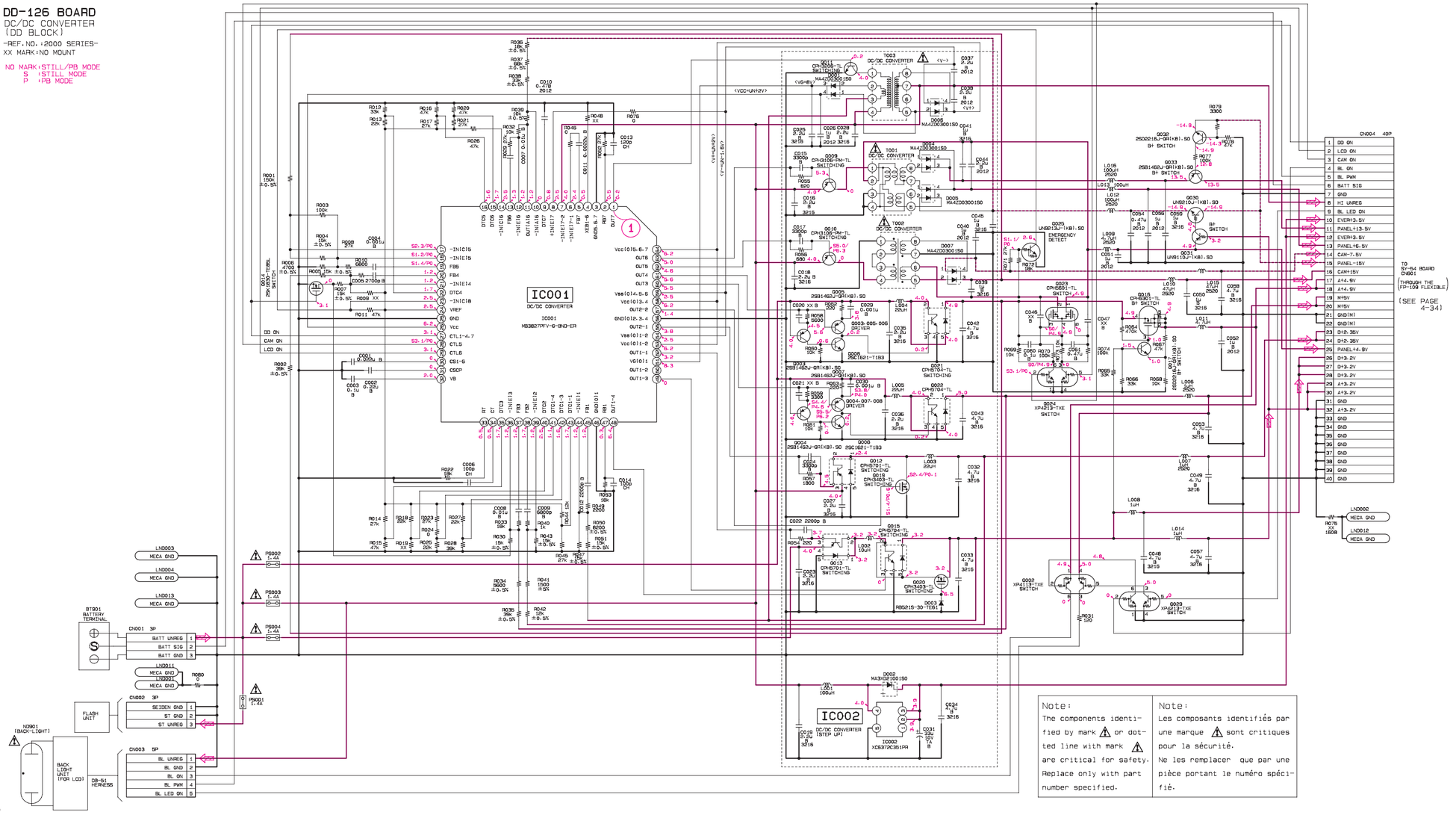
DC/DC CONVERTER
(DD BLOCK)

-REF.NO.:2000 SERIES-
XX MARK:NO MOUNT

NO MARK:STILL/PB MODE
S :STILL MODE
P :PB MODE

DD-126 BOARD





Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 5
ADJUSTMENTS

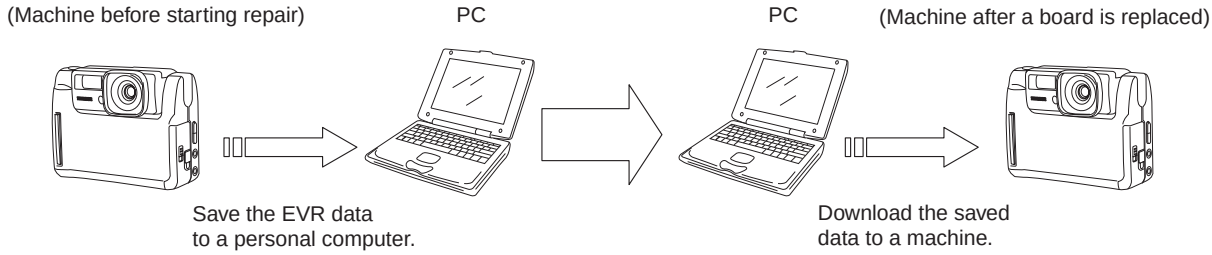
1. Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

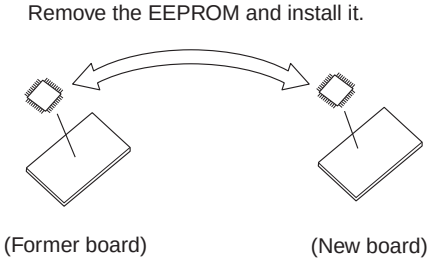
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



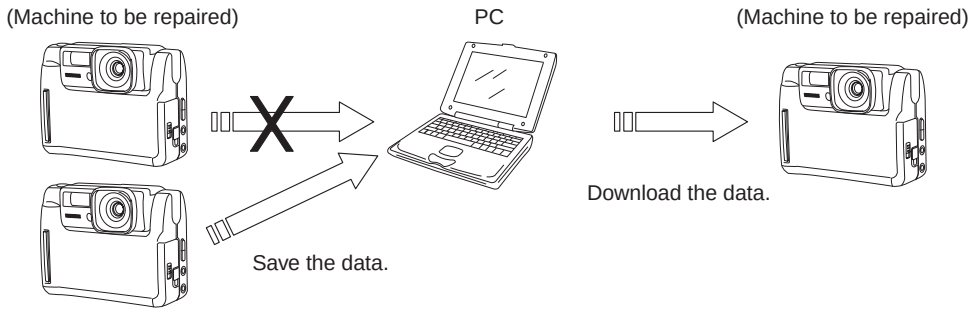
Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.



Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 5-2 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts: Block replacement: Lens device	Strobe unit	LCD block	LCD block	Mounted parts replacement: CD-224 board	SY-54 board	SY-54 board	SY-54 board	SY-54 board	SY-54 board	SY-54 board	SY-54 board	Board replacement: SY-54 board	MM-39 board	MM-39 board	MM-39 board
				LCD901 (LCD panel)	ND901 Back light unit	IC102 (CCD imager)	IC152 (S/H, AGC, A/D)	IC251 (CAMERA DSP)	IC206 (EVR)	IC301 (VIDEO AMP)	IC802 (RGB decoder)	IC901 (Timing generator)	IC801 (EVR)	(COMPLETE)	(COMPLETE)	IC456 EEPROM	IC457 EEPROM
Initialization of B, D, E, F page data	Initialization of D page data														●	●	
	Initialization of B, E, F page data														●		●
Video	Video sync level adj.							●	●	●				●	●		●
	Video burst level adj.							●	●	●				●	●		●
Camera	HALL adj.	●							●					●	●		●
	Flange back adj.	●				●									●		●
	F No. standard data input	●				●									●		●
	Mechanical shutter adj.	●				●									●		●
	Light level adj.	●				●	●								●		●
	Auto white balance standard data input					●	●								●		●
	Auto white balance adj.					●	●								●		●
	Color reproduction adj.					●	●								●		●
	Strobe white balance adj.		●			●	●		●					●	●		●
	CCD defect compensation					●									●		●
LCD	LCD initial data input														●	●	
	VCO adj.											●	●	●	●	●	
	D range adj.										●		●	●	●	●	
	Bright adj.										●		●	●	●	●	
	Contrast adj.										●		●	●	●	●	
	Color adj.										●		●	●	●	●	
	V-COM level adj.										●		●	●	●	●	
	V-COM adj.			●							●		●	●	●	●	
	White balance adj.			●	●						●		●	●	●	●	
System control	Battery end adj.													●	●	●	

Table. 5-1-1.

5-1. ADJUSTMENTS

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope
• Regulated power supply • Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.4	J-6080-806-A	White balance check
	ND filter 0.1	J-6080-807-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded). (Note 1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	CPC-9 jig (Note 2)	J-6082-393-C	For connecting the adjustment remote commander For adjusting the LCD block
J-9	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-10	Extension cable (80P, 0.5mm)	J-6082-444-A	For extension between the MM-39 board (CN451) and the SY-54 board (CN603)
J-11	Personal computer with Windows95/98 installed		For checking the recorded picture
J-12	Picture Gear Ver.3.2 Lite		Picture management software For checking the recorded picture

Note 1: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), The pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjustment remote commander.

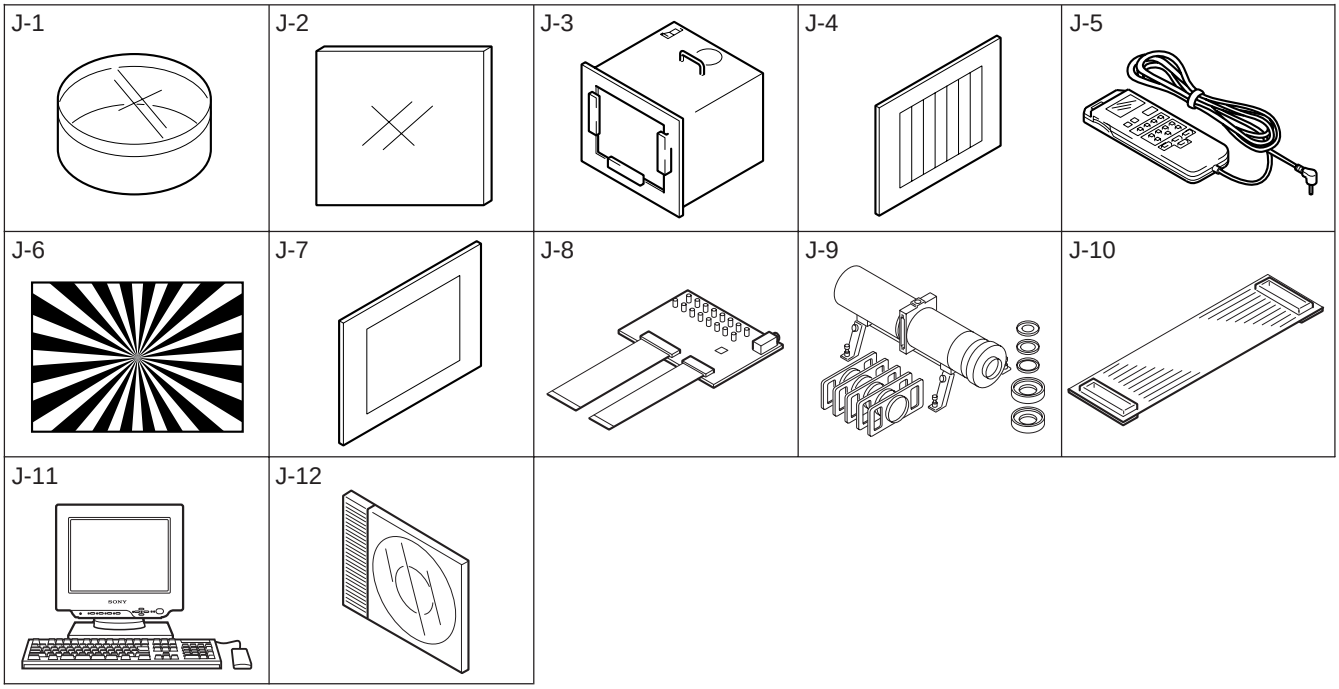


Fig. 5-1-1.

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note 2: When performing only the adjustments, the boards need not be disassembled.

1) Connect the equipment for adjustments according to Fig. 5-1-5.
2) Connect the Adjustment remote commander to SY-54 board CN801 via CPC-9 jig (J-6082-393-C, Note3). (See Fig. 5-1-3.) To operate the adjustment remote commander, connect the power supply terminal of CPC-9 jig to the DC power supply (6.0 to 7.2Vdc).

Note 3: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjustment remote commander.

Note 4: As removing the VL-27 board (removing the SY-54 board CN605) means removing the lithium 3V power supply (VL-27 board BT691), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the VL-27 board has been removed, the self-diagnosis data will be lost. Before disconnecting, note down the self-diagnosis data. (Refer to "SELF-DIAGNOSIS FUNCTION" for the self-diagnosis data.)

Note 5: Setting the "Forced Power ON Mode (Forced STILL Mode)"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the power (STILL mode) to be turned on with MS block removed. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note 6: Setting the "Forced Power ON Mode (Forced PLAY Mode)"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the power (PLAY mode) to be turned on. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note 7: Exiting the "Forced Power ON Mode"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

1-1-3. Discharging of the strobe power supply

The capacitor which is used as power supply of strobe is charged with 200V to 300V voltage. Discharge this voltage before starting adjustments in order to protect service engineers from electric shock during adjustment.

Discharge procedure

1. Press the FLASH button (HF block) and turn off the FLASH LED (HF block).
2. Fabricate the short jig as shown in Fig. 5-1-4 locally by yourself. Connect the short jig to the positive (+) and negative (-) terminal of the flash voltage charge capacitor. Allow ten seconds to discharge the voltage.

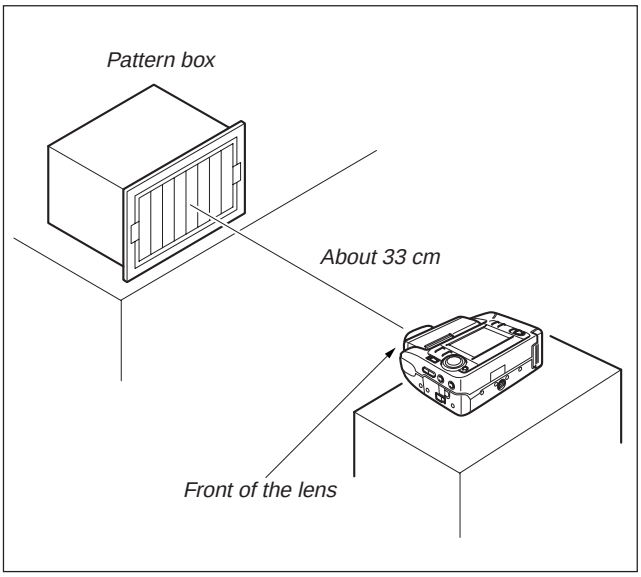


Fig.5-1-2.

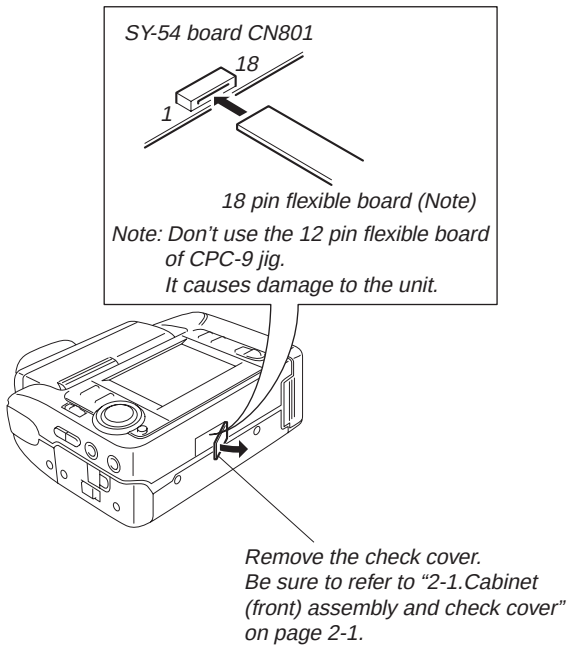

SY-54 board CN801
18
1
18 pin flexible board (Note)
Note: Don't use the 12 pin flexible board of CPC-9 jig.
It causes damage to the unit.
Remove the check cover.
Be sure to refer to "2-1.Cabinet (front) assembly and check cover" on page 2-1.

Fig.5-1-3.

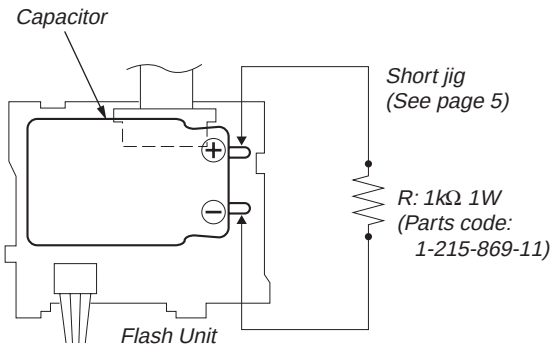


Fig.5-1-4.

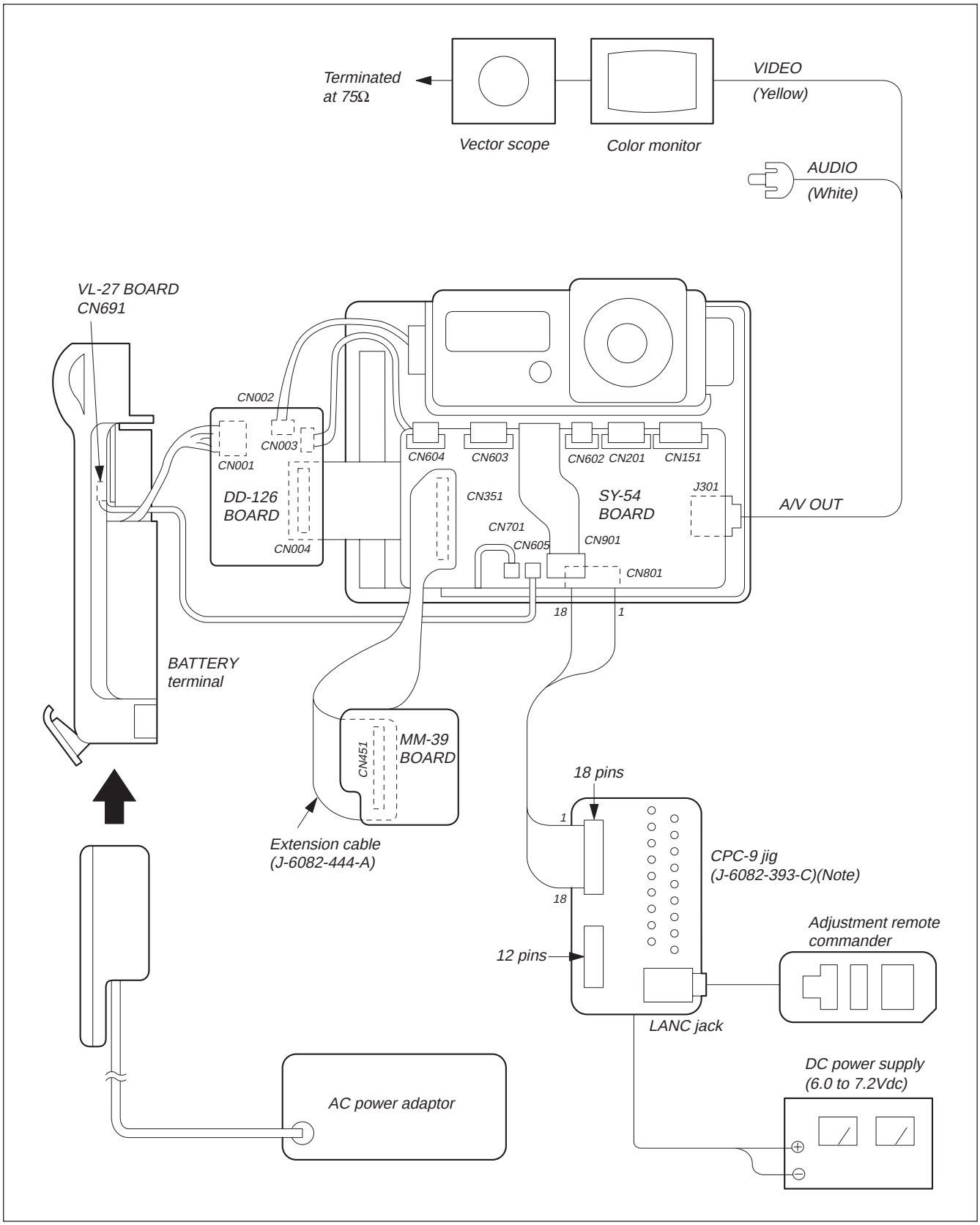


Fig.5-1-5.

Note : The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjustment remote commander.

1-1-4. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

1. DEMO MODE (Menu display) ..... OFF
2. WHITE BALANCE (Menu display) ..... AUTO
3. FLASH LEVEL (Menu display) ..... NORMAL
4. EXPOSURE (Menu display) 0EV
5. EFFECT (Menu display) ..... OFF
6. ZOOM (MS block) ..... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.

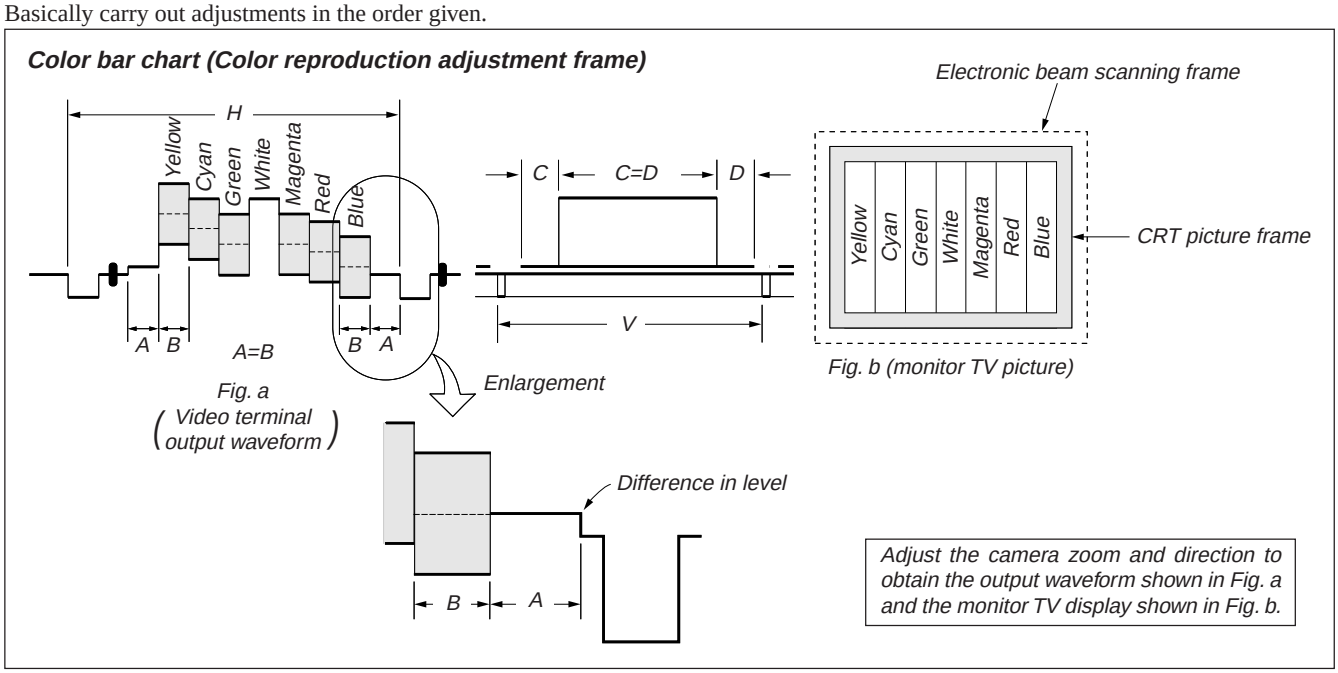


Fig.5-1-6.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-6. (Color reproduction adjustment frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-7. using A0 size (1189mm × 841mm) black and white vellum paper.

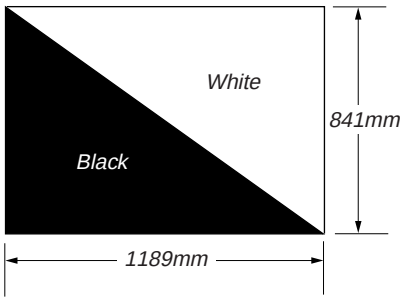


Fig. 5-1-7.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF B, D, E, F PAGE DATA

1-2-1. INITIALIZATION OF D PAGE DATA

1. Initializing the D Page Data

Note: If the D page data has been initialized, the following adjustments need to be performed again.
1) Modification of D page data
2) LCD system adjustments
3) Battery end adjustments

Adjusting page	D
Adjusting Address	10 to EF

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 03, and set data: 00.
3) Select page: 2, address: 00, and set data: 2D.
4) Select page: 2, address: 01, set data: 2D, and press the PAUSE button of the adjustment remote commander.
5) Select page: 2, address: 02, and check that the data changes to "01".
6) Perform "Modification of D Page Data".

2. Modification of D Page Data

If the D page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of D Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

3. D Page Table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the D Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of D Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Test mode
11			Fixed data-1 (Initialized data)
12			
13			
14			
15			
16			
17			
18			
19			
1A			
1B			
1C			
1D			
1E			
1F			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E			
2F			
30	80	80	Battery end adj.
31	88	88	
32	AD	AD	
33	C2	C2	
34	CD	CD	
35			Fixed data-1 (Initialized data)
36			
37			
38			Fixed data-2 (Modified data, copy the data built in the same model.)
39			
3A			
3B			
3C			Fixed data-1
3D			Fixed data-2 (Modified data, copy the data built in the same model.)
3E			
3F			
40			
41			

Address	Initial value		Remark
	NTSC	PAL	
42			Fixed data-1
43			(Initialized data)
44			
45			Fixed data-2
46			Fixed data-1
47			(Initialized data)
48			
49			
4A	05	05	Battery end adj.
4B			Fixed data-1
4C			(Initialized data)
4D			
4E			
4F			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			
5E			
5F			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
6A			
6B			
6C			
6D			
6E			
6F			
70			
71			
72			
73			
74			
75			
76			
77			
78			

Address	Initial value		Remark
	NTSC	PAL	
79			Fixed data-1
7A			(Initialized data)
7B			
7C			
7D			
7E			
7F			
80	BC	BC	Bright adj. (LCD)
81	80	80	Color adj. (LCD)
82	B9	B9	White balance adj. (LCD)
83	B7	B7	
84	BE	BE	Contrast adj. (LCD)
85	C8	C8	D range adj. (LCD)
86	7C	7C	V-COM level adj. (LCD)
87	50	50	NTSC model: VCO adj. (LCD) PAL model: Fixed data-2
88	74	74	V-COM adj. (LCD)
89			Fixed data-1
8A			(Initialized data)
8B			
8C			
8D	50	50	PAL model: VCO adj. (LCD) NTSC model: Fixed data-2
8E			Fixed data-1
8F			(Initialized data)
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			
A1			
A2			
A3			
A4			
A5			
A6			
A7			
A8			
A9			
AA			
AB			
AC			
AD			

Address	Initial value		Remark
	NTSC	PAL	
AE			Fixed data-1 (Initialized data)
AF			
B0			
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			Fixed data-2 (Modified data, copy the data built in the same model.)
C1			Fixed data-1 (Initialized data)
C2			
C3			Fixed data-2 (Modified data, copy the data built in the same model.)
C4			Fixed data-1 (Initialized data)
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6			
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			
E0			

Address	Initial value		Remark
	NTSC	PAL	
E1			Fixed data-1 (Initialized data)
E2			
E3			
E4			
E5			
E6			
E7			
E8			
E9			
EA			
EB			
EC			
ED			
EE			
EF			

Table. 5-1-2.

1-2-2. Initializing the B, E, F Page Data

1. Initializing the B, E, F Page Data

Note: If the B, E, F Page data has been initialized, "Modification of B, E, F Page Data" and following adjustments need to be performed again.
1) Modification of B, E, F page data
2) Video system adjustments
3) Camera system adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	B
Adjusting Address	00 to FF

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 00, and set data: 2D.
3) Select page: 6, address: 01, set data: 2D, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 02, and check that the data changes to "01".
5) Perform "Modification of B, E, F Page Data".

2. Modification of B, E, F Page Data

If the B, E, F Page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of B, E, F Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

3. F Page table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the B, E, F Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of B, E, F Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10			Fixed data-1
11			(Initialized data)
12			
13			
14	10	10	Flange back adj.
15	00	00	
16	10	10	
17	01	01	
18	11	11	
19	00	00	
1A	00	00	
1B	00	00	
1C	00	00	
1D	00	00	
1E	00	00	
1F	00	00	
20	20	20	
21	20	20	
22	00	00	
23	40	40	
24	0A	0A	
25	00	00	
26	A8	A8	Light level adj.
27			Fixed data-1
28	85	85	Light level adj.
29	5C	5C	F No. standard data input
2A	4E	4E	
2B	49	49	
2C	45	45	
2D			Fixed data-1
2E	7A	7A	HALL adj.
2F	77	77	
30			Fixed data-1
31			(Initialized data)
32			
33			
34	14	14	HALL adj.
35	78	78	
36			Fixed data-1
37			(Initialized data)
38			
39			
3A	2F	2F	AWB standard data input
3B	37	37	
3C	40	40	
3D	D0	D0	
3E			Fixed data-1
3F	B5	B5	Auto white balance adj.
40	43	43	
41	03	03	Color reproduction adj.

Address	Initial value		Remark
	NTSC	PAL	
42	E9	E9	Color reproduction adj.
43	63	63	
44	83	83	
45	D5	D5	
46	FE	FE	
47	73	73	
48	45	45	
49			Fixed data-1
4A			(Initialized data)
4B			
4C			
4D	27	27	Strobe white balance adj.
4E	77	77	
4F			Fixed data-1
50			(Initialized data)
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A	14	14	Mechanical shutter adj.
5B			Fixed data-1
5C			(Initialized data)
5D			
5E			
5F			
60			
61			
62			
63			
64			
65	61	61	Video sync level adj.
66	61	61	Video burst level adj.
67			Fixed data-1
68	0B	0B	Strobe white balance adj.
69	3B	3B	
6A	00	00	
6B	2B	2B	
6C	07	07	Mechanical shutter adj.
6D	D0	D0	
6E	07	07	
6F	D0	D0	
70	07	07	
71	D0	D0	
72	07	07	
73	D0	D0	
74	07	07	
75	D0	D0	
76	33	33	
77	33	33	
78	33	33	

Address	Initial value		Remark
	NTSC	PAL	
79	33	33	Mechanical shutter adj.
7A	33	33	
7B	33	33	
7C	33	33	
7D	33	33	
7E	33	33	
7F	33	33	
80			Fixed data-2 (Modified data, copy the data built in the same model.)
81			Fixed data-1
82			(Initialized data)
83			
84			
85			
86			
87			
88			
89			
8A			
8B			
8C			
8D			
8E			
8F			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			
A1			
A2			
A3			
A4			
A5			
A6			
A7			
A8			
A9			
AA			
AB			
AC			
AD			

Address	Initial value		Remark
	NTSC	PAL	
AE			Fixed data-1
AF			(Initialized data)
B0			
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6			
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			
E0			
E1			
E2			
E3			
E4			

Address	Initial value		Remark
	NTSC	PAL	
E5			Fixed data-1
E6			(Initialized data)
E7			
E8			
E9			
EA			
EB			
EC			
ED			
EE			
EF			
F0			
F1			
F2			
F3			
F4			
F5			
F6			
F7			
F8			
F9			
FA			
FB			
FC			
FD			
FE			
FF			

Table. 5-1-3.

4. E Page Table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the B, E, F Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of B, E, F Page Data".)

Address	Remark
00	Fixed data-1 (Initialized data)
01	
02	
03	
04	
05	
06	
07	
08	
09	
0A	
0B	
0C	
0D	
0E	
0F	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
1A	
1B	
1C	
1D	
1E	
1F	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
2A	
2B	
2C	
2D	
2E	
2F	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
3A	
3B	
3C	
3D	
3E	
3F	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
4A	Fixed data-2 (Modified data, copy the data built in the same model.)
4B	Fixed data-1 (Initialized data)
4C	
4D	
4E	
4F	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
5A	
5B	
5C	
5D	
5E	
5F	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
6A	
6B	

Address	Remark
6C	Fixed data-1
6D	(Initialized data)
6E	
6F	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
7A	
7B	
7C	
7D	
7E	
7F	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
8A	
8B	
8C	
8D	
8E	
8F	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
9A	
9B	
9C	
9D	
9E	
9F	
A0	
A1	
A2	
A3	
A4	

Address	Remark
A5	Fixed data-1
A6	(Initialized data)
A7	
A8	
A9	
AA	
AB	
AC	
AD	
AE	
AF	
B0	
B1	
B2	
B3	
B4	
B5	
B6	
B7	
B8	
B9	
BA	
BB	
BC	
BD	
BE	
BF	
C0	
C1	
C2	
C3	
C4	
C5	
C6	
C7	
C8	
C9	
CA	
CB	
CC	
CD	
CE	
CF	
D0	
D1	
D2	
D3	
D4	
D5	
D6	
D7	
D8	
D9	
DA	
DB	
DC	
DD	

Address	Remark
DE	Fixed data-1 (Initialized data)
DF	
E0	
E1	
E2	
E3	
E4	Fixed data-2 (Modified data, copy the data built in the same model.)
E5	Fixed data-1 (Initialized data)
E6	
E7	
E8	
E9	
EA	
EB	
EC	
ED	
EE	
EF	
F0	
F1	
F2	
F3	
F4	
F5	
F6	
F7	
F8	
F9	
FA	
FB	
FC	
FD	
FE	
FF	

Table. 5-1-4.

5. B Page Table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the B, E, F Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of B, E, F Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00			Fixed data-1 (Initialized data)
01			
02			
03			
04			
05			
06			
07			
08			
09			
0A			
0B			
0C			
0D			
0E			
0F			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
1A			
1B			
1C			
1D			
1E			
1F			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E			
2F			
30			
31			
32			

Address	Initial value		Remark
	NTSC	PAL	
33			Fixed data-1
34			(Initialized data)
35			
36			
37			
38			
39			
3A			
3B			
3C			
3D			
3E			
3F			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
4A			
4B			
4C			
4D			
4E			
4F			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			
5E			
5F			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			

Address	Initial value		Remark
	NTSC	PAL	
6A			Fixed data-1
6B			(Initialized data)
6C			
6D			
6E			
6F			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
7A			
7B			
7C			
7D			
7E			
7F			
80			
81			
82			
83			
84			
85			
86			
87			
88	0F	0F	CCD defect compensation
89	FF	FF	
8A	0F	0F	
8B	FF	FF	
8C	0F	0F	
8D	FF	FF	
8E	0F	0F	
8F	FF	FF	
90	0F	0F	
91	FF	FF	
92	0F	0F	
93	FF	FF	
94	0F	0F	
95	FF	FF	
96	0F	0F	
97	FF	FF	
98	0F	0F	
99	FF	FF	
9A	0F	0F	
9B	FF	FF	
9C	0F	0F	
9D	FF	FF	
9E	0F	0F	
9F	FF	FF	
A0	0F	0F	

Address	Initial value		Remark
	NTSC	PAL	
A1	FF	FF	CCD defect compensation
A2	0F	0F	
A3	FF	FF	
A4	0F	0F	
A5	FF	FF	
A6	0F	0F	
A7	FF	FF	
A8	0F	0F	
A9	FF	FF	
AA	0F	0F	
AB	FF	FF	
AC	0F	0F	
AD	FF	FF	
AE	0F	0F	
AF	FF	FF	
B0			Fixed data-1
B1			(Initialized data)
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6			
D7			

Address	Initial value		Remark
	NTSC	PAL	
D8			Fixed data-1
D9			(Initialized data)
DA			
DB			
DC			
DD			
DE			
DF			
E0			
E1			
E2			
E3			
E4			
E5			
E6			
E7			
E8			
E9			
EA			
EB			
EC			
ED			
EE			
EF			
F0			
F1			
F2			
F3			
F4			
F5			
F6			
F7			
F8			
F9			
FA			
FB			
FC			
FD			
FE			
FF			

Table. 5-1-5.

1-3. VIDEO SYSTEM ADJUSTMENTS

1. Video Sync Level Adjustment (SY-54 board)

Adjust the sync level of the composite video signal output.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Video terminal of AV OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	65
Specified Value	A = 290 ± 5mV (NTSC) A = 305 ± 5mV (PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, and set data: 04.
3) Select page: F, address: 65, change the data and set the sync level (A) to the specified value.
4) Select page: 5, address: F1, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

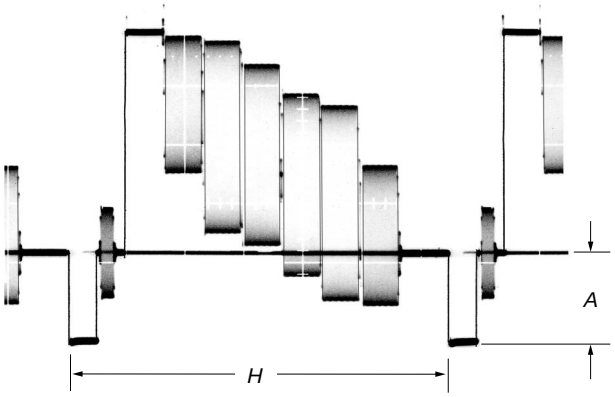


Fig.5-1-8.

2. Video Burst Level Adjustment (SY-54 board)

Adjust the burst level of the composite video signal output.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Video terminal of AV OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	66
Specified Value	A = 286 ± 5mV (NTSC) A = 300 ± 5mV (PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, and set data: 04.
3) Select page: F, address: 66, change the data and set the burst level (A) to the specified value.
4) Select page: 5, address: F1, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

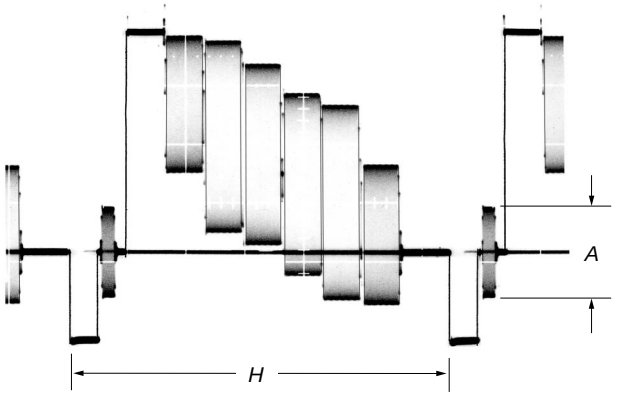


Fig.5-1-9.

3. Video Y Level Check (SY-54 board)

Confirm the Y level of the composite video signal output.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Video terminal of AV OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	A = 714 ± 20mV (NTSC) A = 700 ± 20mV (PAL)

Adjusting method:

1) Select page: 5, address: F1, and set data: 04.
2) Check that the white (100 IRE) level (A) satisfies the specified value.
3) Select page: 5, address: F1, and set data: 00.

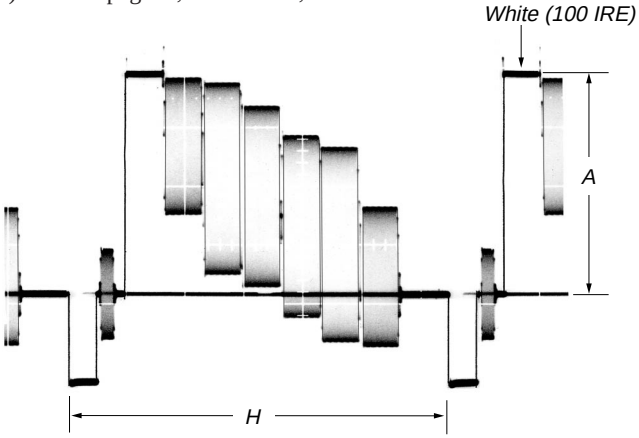


Fig.5-1-10.

1-4. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

1. HALL Adjustment

For detecting the position of the lens iris, adjust the hall AMP gain and offset.

Mode	STILL
Subject	Arbitrary
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	2E, 2F, 34, 35
Specified Value	12 to 16 during IRIS OPEN 76 to 7A during IRIS CLOSE

Note 1: Displayed data of page 1 of the adjustment remote commander.

1 : 00 : XX
└── Display data

Note 2: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 94, and set data: 14.
3) Select page: 6, address: 95, and set data: 78.
4) Select page: 6, address: 01, set data: 6D, and press the PAUSE button of the adjustment remote commander. (The HALL adjustment is performed and the adjustment data is stored in page: F, address: 2E, 2F, 34 and 35.)
5) Select page: 6, address: 02, and check that the data is "01".
6) Select page: 6, address: 01, set data: 00, and press the PAUSE button.

Checking method:

1) Select page: 0, address: 03, and set data: 03.
2) Select page: 6, address: 01, set data: 01, and press the PAUSE button.
3) Select page: 1, and check that the display data (Note1) during IRIS OPEN satisfies the specified value.
4) Select page: 6, address: 01, set data: 03, and press the PAUSE button.
5) Select page: 1, and check that the display data during IRIS CLOSE satisfies the specified value.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 94, and set data: 00.
3) Select page: 6, address: 95, and set data: 00.
4) Select page: 0, address: 01, and set data: 00.
5) Select page: 0, address: 03, and set data: 00.

2. Flange Back Adjustment (Using Minipattern Box)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Mode	STILL
Subject	Siemens star chart with ND filter for the minipattern box (Note1)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25

Note 1: Dark Siemens star chart.
Note 2: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Preparations before adjustments:

The minipattern box is installed as shown in the following figure.
Note: The attachment lenses are not used.

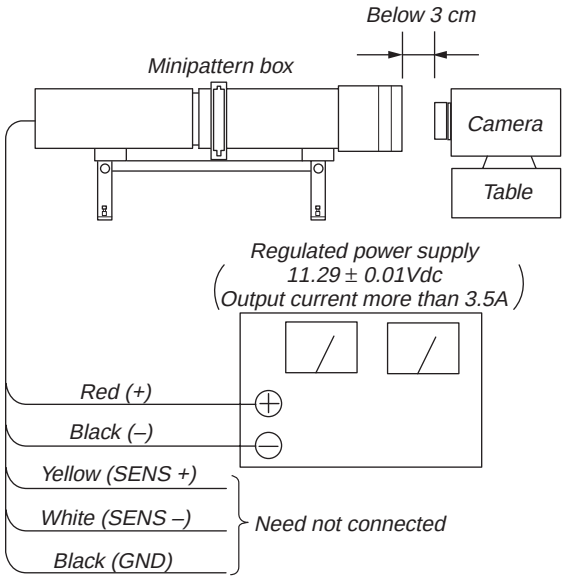


Fig.5-1-11.

Adjusting method:

1) Install the minipattern box so that the distance between it and the front of the lens of the camera is less than 3cm.
2) Make the height of the minipattern box and the camcorder equal.
3) Check that the output voltage of the regulated power supply is 11.29 ± 0.01Vdc.
4) Select page: 0, address: 01, and set data: 01.
5) Select page: 5, address: F1, and set data: FF.
6) Check that the center of the Siemens star chart and center of the exposure screen coincide.
7) Check that the data of page: F, address: 14 to 25 is the initial value (See table below).

Address	Data	Address	Data	Address	Data
14	10	1A	00	20	20
15	00	1B	00	21	20
16	10	1C	00	22	00
17	01	1D	00	23	40
18	11	1E	00	24	0A
19	00	1F	00	25	00

8) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
9) Select page: 6, address: 01, set data: 27, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses: 14 to 25.)
10) Select page: 6, address: 02, and check that the data is changed to "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 5, address: F1, and set data: 00.
3) Perform "Flange Back Check".

3. Flange Back Adjustment (Using Flange Back Adjustment Chart)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Mode	STILL
Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 350 ± 50 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25

Note: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, and set data: FF.
3) Check that the center of the chart for the flange back adjustment and center of the exposure screen coincide.
4) Check that the data of page: F, address: 14 to 25 is the initial value (See table below).

Address	Data	Address	Data	Address	Data
14	10	1A	00	20	20
15	00	1B	00	21	20
16	10	1C	00	22	00
17	01	1D	00	23	40
18	11	1E	00	24	0A
19	00	1F	00	25	00

5) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
6) Select page: 6, address: 01, set data: 15, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses: 14 to 25.)
7) Select page: 6, address: 02, and check that the data is changed to "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 5, address: F1, and set data: 00.
3) Perform "Flange Back Check".

4. Flange Back Check

Mode	STILL
Subject	Siemens star (2.0 m from the front of the lens) (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	The lens is focused.

Checking method:

1) Place the Siemens star 2.0m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
3) Select page: 5, address: F1, and set data: FF.
4) Select page: 6, address: 2C, and set data: 02.
5) Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustments:

1) Select page: 6, address: 2C, and set data: 00.
2) Select page: 5, address: F1, and set data: 00.

5. Picture Frame Setting

Mode	STILL
Subject	Color bar chart (Color reproduction adjustment frame) (Approx. 33cm from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Setting method:

1) Select page: 5, address: F1, and set data: FF.
2) Adjust the direction and the distance between the pattern box and camera, and set the picture frame to the specified position.
3) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color reproduction adjustment frame”.
4) Select page: 5, address: F1, and set data: 00.

Check on an oscilloscope

1. Horizontal period

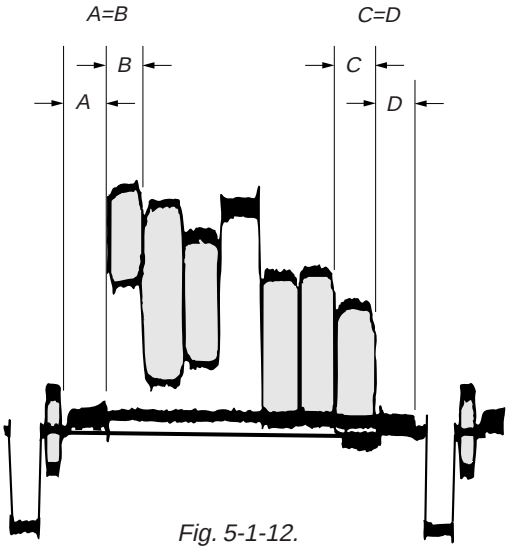


Fig. 5-1-12.

2. Vertical period

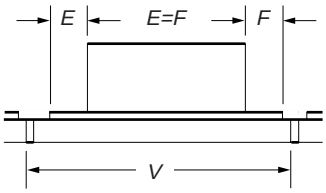


Fig. 5-1-13.

Check on the monitor TV (Underscanned mode)

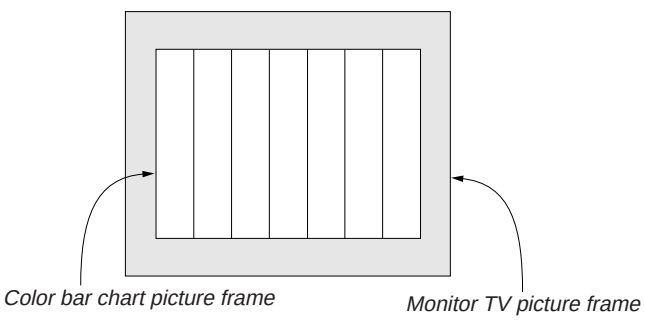


Fig. 5-1-14.

6. F No. Standard Data Input

Compensate the unevenness of the iris meter sensitivity.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	29 to 2C

Note: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, and set data: FF.
3) Select page: 6, address: 01, set data: BB, and press the PAUSE button of the adjustment remote commander.
   (The F No. standard data input is performed and the adjustment data is stored in page: F, address: 29 to 2C.)
4) Select page: 6, address: 02, and check that the data is “01”.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 5, address: F1, and set data: 00.
3) Select page: 0, address: 01, and set data: 00.

7. Mechanical Shutter Adjustment

Adjust the period which the mechanical shutter is closed, and compensate the exposure.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	5A, 6C to 7F

Note: Check that the data of page: 6, address: 02 is “00”. If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, and set data: FF.
3) Select page: 6, address: 01, set data: AD, and press the PAUSE button of the adjustment remote commander.
   (The mechanical shutter adjustment is performed and the adjustment data is stored in page: F, address: 5A, 6C to 7F.)
4) Select page: 6, address: 02, and check that the data changes to “01”.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 5, address: F1, and set data: 00.
3) Select page: 0, address: 01, and set data: 00.

8. Light Level Adjustment

Adjust the standard LV value.

Mode	STILL
Subject	Clear chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	26, 28

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Note 2: If "Initializing the B, E, F Page Data" was performed before this adjustment, check that the data (Fixed data-2) of page: E, address: 4A was modified correctly.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, and set data: FF.
3) Select page: 6, address: 10, and set data: 58.
4) Select page: 6, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
   (The light level adjustment is performed and the adjustment data is stored in page: F, address: 26, 28.)
5) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 10, and set data: 00.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
3) Select page: 5, address: F1, and set data: 00.
4) Select page: 0, address: 01, and set data: 00.

9. Auto White Balance Standard Data Input

Adjust the white balance standard data at 3200K.

Mode	STILL
Subject	Clear chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	3A to 3D

Note: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: E, address: 52, after noting down the data, set data: 0E, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 10, and set data: 58.
4) Select page: 6, address: 01, set data: 11, and press the PAUSE button.
5) Select page: 6, address: 01, set data: 0B, and press the PAUSE button.
   (The auto white balance standard data input is performed and the adjustment data is stored in page: F, address: 3A to 3D.)
6) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: E, address: 52, set the data noted down at step 2), and press the PAUSE button.
2) Select page: 6, address: 10, and set data: 00.
3) Select page: 6, address: 01, and set data: 00, and press the PAUSE button.
4) Select page: 5, address: F1, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

10. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Display data of page 1 (Note2)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	3F, 40
Specified Value	R ratio: 2A40 to 2AC0 B ratio: 5E40 to 5F40

Note 1: Perform "Auto White Balance Standard Data Input" before this adjustment.

Note 2: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Note 3: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└──── Display data

Adjusting method:

1) Place the C14 filter for color temperature correction on the lens.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: E, address: 52, after noting down the data, set data: 0E, and press the PAUSE button of the adjustment remote commander.
4) Select page: F, address: 49 to 4C, and note down the data of each address.
5) Input the following data to page: F, addresses: 49 to 4C.

Address	49	4A	4B	4C
Data	2A	80	5E	C0

Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

6) Select page: 5, address: F1, and set data: FF.
7) Select page: 6, address: 10, and set data: 58.
8) Select page: 6, address: 01, set data: A7, and press the PAUSE button.
9) Select page: 6, address: 01, set data: A5, and press the PAUSE button.
   (The auto white balance adjustment is performed and the adjustment data is stored in page: F, address: 3F and 40.)
10) Select page: 6, address: 02, and check that the data is "01".
11) Select page: 6, address: 01, set data: 3F, and press the PAUSE button.
12) Select page: 0, address: 03, and set data: 04.
13) Select page: 1, and check that the display data (Note3) satisfies the R ratio specified value.
14) Select page: 0, address: 03, and set data: 05.
15) Select page: 1, and check that the display data (Note3) satisfies the B ratio specified value.
16) Select page: F, address: 49 to 4C, and input the data noted down at step 4).
    Note: After setting each data, be sure to press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: E, address: 52, set the data noted down at step 3), and press the PAUSE button of the adjustment remote commander.
2) Select page: 6, address: 10, and set data: 00.
3) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
4) Select page: 5, address: F1, and set data: 00.
5) Select page: 0, address: 03, and set data: 00.
6) Select page: 0, address: 01, and set data: 00.

11. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

11-1. Color Reproduction Adjustment

Mode	STILL
Subject	Color bar chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	41 to 48

Note 1: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input" and "Color Reproduction Adjustment".

Note 2: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: E, address: 52, after noting down the data, set data: 0B, and press the PAUSE button of the adjustment remote commander.
3) Select page: 5, address: F1, and set data: FF.
4) Check that the picture frame is set to the specified position. (Refer to "5. Picture Frame Setting".)
5) Select page: 6, address: 10, and set data: 59.
6) Select page: 6, address: 01, set data: AB, and press the PAUSE button.
7) Select page: 6, address: 01, set data: A9, and press the PAUSE button.
   (The color reproduction adjustment is performed and the adjustment data is stored in page: F, address: 41 to 48.)
8) Select page: 6, address: 02, and check that the data is "01".
9) Perform "Color Reproduction Check" and "Processing after Completing Adjustments".

11-2. Color Reproduction Check

Mode	STILL
Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Each center of all color luminance points should settle within each color reproduction frame.

Checking method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: E, address: 52, after noting down the data, set data: 0B, and press the PAUSE button of the adjustment remote commander.
3) Select page: 5, address: F1, and set data: FF.
4) Select page: 6, address: 10, and set data: 59.
5) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
6) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
7) Check that each center of all color luminance points is settled in each color reproduction frame.
8) Perform "Processing after Completing Adjustments".

11-3. Processing after Completing Adjustments

1) Select page: E, address: 52, set the data noted down at step 2), and press the PAUSE button of the adjustment remote commander.
2) Select page: 6, address: 10, and set data: 00.
3) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
4) Select page: 5, address: F1, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

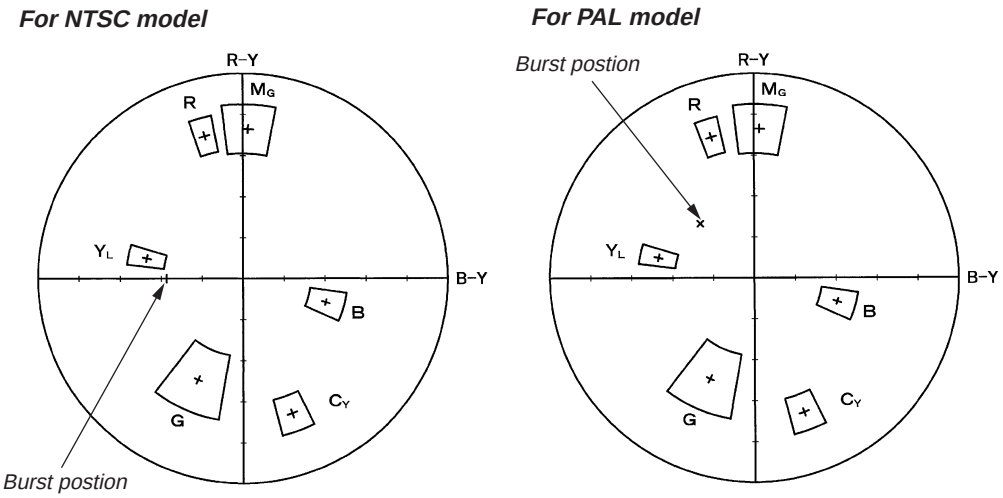


Fig.5-1-15.

12. White Balance Check

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.4 and 0.1
Measurement Point	Video output terminal
Measuring Instrumen	Vectorscope
Specified Value	Fig. 5-1-16. A to C

Checking method:

1) Check that the lens is not covered with either filter.
2) Select page: 5, address: F1, and set data: FF.
3) Select page: 6, address: 10, and set data: 58.
4) Select page: 6, address: 01, set data: 0F, and press the PAUSE button of the adjustment remote commander.
5) Check that the center of the white luminance point is within the circle shown Fig. 5-1-16. (A).
6) Select page: 6, address: 01, set data: 23, and press the PAUSE button.
7) Place the C14 filter on the lens.
8) Check that the center of the white luminance point settles in the circle shown Fig. 5-1-16. (B).
9) Remove the C14 filter, and place the ND filter 1.5 (1.0 +0.4+0.1) on the lens.
10) Check that the white luminance point stopped moving, and then remove the ND filter 1.5.
11) Check that the center of the white luminance point settles within the circle shown Fig. 5-1-16. (C).

Processing after Completing Adjustments:

1) Select page: 6, address: 10, and set data: 00.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
3) Select page: 5, address: F1, and set data: 00.

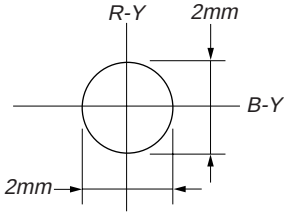


Fig.5-1-16.(A)

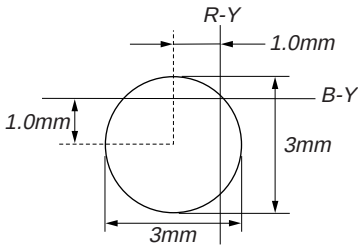


Fig.5-1-16.(B)

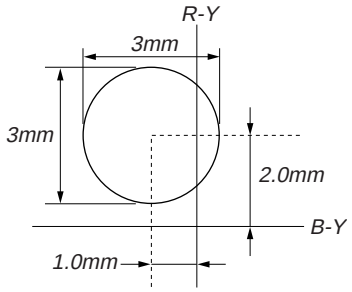


Fig.5-1-16.(C)

13. Strobe White Balance Adjustment

Adjust the white balance when the strobe light flashes.

Mode	STILL
Subject	A plate which reflection rate is 18% (1.0m from the front of the lens)
Adjustment Page	F
Adjustment Address	4D, 4E, 68, 69, 6A, 6B

Note 1: Perform this adjustment in the dark room or use a dark box.
Note 2: Any light other than the strobe light should not light up the plate.
Note 3: This adjustment should be carried out upon completion of "HALL Adjustment", "Flange Back Adjustment", "Light Level Adjustment" and "Auto White Balance Adjustment".
Note 4: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: E, address: 52, after noting down the data, set data: 0E, and press the PAUSE button of the adjustment remote commander.
3) Select page: 5, address: F1, and set data: FF.
4) Select page: 6, address: 2C, and set data: 01.
5) Select page: 6, address: 10, and set data: 58.
6) Select page: 6, address: 92, and set data: 00.
7) Select page: 6, address: 93, and set data: A0.
8) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
9) Select page: 6, address: 01, set data: B9, and press the PAUSE button.
10) Check the flashing of the strobe light.
    (The strobe white balance adjustment is performed and the adjustment data is stored in page: F, address: 4D, 4E, 68, 69, 6A and 6B.)
11) Select page: 6, address: 02, and check that the data is "01".
12) Select page: F, and check the combination data of addresses: 68 and 69.
    Note: Address: 68 is upper two digits.
    Address: 69 is lower two digits.
    If the combination data is below "0980", input the following data to page: F, addresses: 68 and 69.

Address	68	69
Data	09	80

    Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
13) Select page: F, address: 6B, and check the data.
    If the data is below "39", set data: "39" to the address and press the PAUSE button.

Processing after Completing Adjustments:

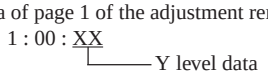
1) Select page: E, address: 52, set the data noted down at step 2), and press the PAUSE button.
2) Select page: 6, address: 10, and set data: 00.
3) Select page: 6, address: 2C, and set data: 00.
4) Select page: 6, address: 93, and set data: 00.
5) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
6) Select page: 5, address: F1, and set data: 00.
7) Select page: 0, address: 01, and set data: 00.

14. Strobe Light Level and White Balance Check

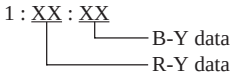
Check the light level regulation and the white balance when the strobe light flashes.

Mode	STILL
Subject	A plate which reflection rate is 18% (1.0m from the front of the lens) (Note1)
Measurement Point	Display data of page: 1
Measuring Instrument	Adjustment remote commander
Specified value	Y level data: 68 to A9 (Note4) R-Y data: FA to FF or 00 to 06 (Note5) B-Y data: FA to FF or 00 to 06 (Note5)

Note 1: Perform this adjustment in the dark room or use a dark box.
Note 2: Any light other than the strobe light should not light up the plate.
Note 3: This adjustment should be carried out upon completion of "HALL Adjustment", "Flange Back Adjustment", "Light Level Adjustment", "Auto White Balance Adjustment" and "Strobe White Balance Adjustment".
Note 4: Display data of page 1 of the adjustment remote commander.



Note 5: Display data of page 1 of the adjustment remote commander.



Checking method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: E, address: 52, after noting down the data, set data: 0E, and press the PAUSE button of the adjustment remote commander.
3) Select page: 5, address: F1, and set data: FF.
4) Select page: 6, address: 10, and set data: 58.
5) Select page: 6, address: 2C, and set data: 01.
6) Select page: 6, address: 92, and set data: 00.
7) Select page: 6, address: 93, and set data: A0.
8) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
9) Select page: 6, address: 01, set data: 67, and press the PAUSE button.
10) Check the flashing of the strobe light.
11) Select page: 0, address: 03, and set data: 01.
12) Select page: 1, and check that the Y level data satisfies the specified value. (Note4)
13) Select page: 0, address: 03, and set data: 02.
14) Select page: 1, and check that the R-Y data and B-Y data satisfy the specified value respectively.(Note5)

Processing after Completing Adjustments:

1) Select page: E, address: 52, set the data noted down at step 2), and press the PAUSE button.
2) Select page: 6, address: 10, and set data: 00.
3) Select page: 6, address: 2C, and set data: 00.
4) Select page: 6, address: 93, and set data: 00.
5) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
6) Select page: 5, address: F1, and set data: 00.
7) Select page: 0, address: 03, and set data: 00.
8) Select page: 0, address: 01, and set data: 00.

15. CCD Defect Compensation

Mode	STILL
Subject	Clear chart (25 cm from the front of the lens) (Note1)
Adjustment Page	B
Adjustment Address	88 to AF

Note 1: Check that there are no dust, no dirt and no reflection on the clear chart.
Note 2: Any subject other than the clear chart should not be in the screen.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: B, address: 88 to AF, and input data: FF to each address.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Turn the power of the unit OFF and then ON.
4) Wait until the camera picture appear on the screen.
5) Select page: 0, address: 01, and set data: 01.
6) Select page: E, address: 52, after noting down the data, set data: 50, and press the PAUSE button of the adjustment remote commander.
7) Select page: F, address: AF, after noting down the data, set data: B3, and press the PAUSE button.
8) Select page: 5, address: F1, and set data: FF.
9) Select page: 6, address: 2C, and set data: 01.
10) Select page: 6, address: 93, and set data: A0.
11) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
12) Select page: 6, address: 6C, and set data: 01.
13) Select page: 6, address: 01, set data: 8D, and press the PAUSE button.
    (The CCD defect compensation is performed and the adjustment data is stored in page: B, address: 88 to AF.)
14) Select page: 6, address: 02, and check that the data changes to "01".

Processing after Completing Adjustments:

1) Select page: E, address: 52, set the data noted down at step 6), and press the PAUSE button.
2) Select page: F, address: B3, and set data: 60, and press the PAUSE button.
3) Select page: F, address: AF, set the data noted down at step 7), and press the PAUSE button.
4) Select page: 6, address: 01, and set data: 00, and press the PAUSE button of the adjustment remote commander.
5) Select page: 6, address: 2C, and set data: 00.
6) Select page: 6, address: 6C, and set data: 00.
7) Select page: 6, address: 93, and set data: 00.
8) Select page: 5, address: F1, and set data: 00.
9) Select page: 0, address: 01, and set data: 00.

16. CCD Defect Compensation Check

Mode	STILL
Subject	Clear chart (25 cm from the front of the lens) (Note)
Measurement Point	Display data of page: 6, address: 55
Measuring Instrument	Adjustment remote commander
Specified Value	00

Note 1: Check that there are no dust, no dirt and no reflection on the clear chart.

Note 2: Any subject other than the clear chart should not be in the screen.

Checking method:

1) Turn the power of the unit OFF and then ON.
2) Wait until the camera picture appear on the screen.
3) Select page: 0, address: 01, and set data: 01.
4) Select page: F, address: B3, set data: 80, and press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, and set data: FF.
6) Select page: 6, address: 01, set data: 87, and press the PAUSE button.
7) Select page: 6, address: 02, and check that the data changes to "01".
8) Select page: 6, address: 55, and check that the data is "00". (If the data is other than "00", white defect compensation has errors.)
9) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
10) Select page: E, address: 52, after noting down the data, set data: 50, and press the PAUSE button.
11) Select page: F, address: AF, after noting down the data, set data: A5, and press the PAUSE button.
12) Select page: 6, address: 2C, and set data: 01.
13) Select page: 6, address: 93, and set data: A0.
14) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
15) Select page: 6, address: 6C, and set data: 01.
16) Select page: 6, address: 01, set data: 89, and press the PAUSE button.
17) Select page: 6, address: 02, and check that the data changes to "01".
18) Select page: 6, address: 55, and check that the data is "00". (If the data is other than "00", black defect compensation has errors.)

Processing after Completing Adjustments:

1) Select page: E, address: 52, set the data noted down at step 10), and press the PAUSE button.
2) Select page: F, address: B3, set data: 20, and press the PAUSE button.
3) Select page: F, address: AF, set the data noted down at step 11), and press the PAUSE button.
4) Select page: 6, address: 01, and set data: 00, and press the PAUSE button of the adjustment remote commander.
5) Select page: 6, address: 2C, and set data: 00.
6) Select page: 6, address: 6C, and set data: 00.
7) Select page: 6, address: 93, and set data: 00.
8) Select page: 5, address: F1, and set data: 00.
9) Select page: 0, address: 01, and set data: 00.

1-5. LCD SYSTEM ADJUSTMENT

Before perform the LCD system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the LCD BRIGHT to the center.

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN801 of the SY-54 board.

Connect the Measuring Instruments via the CPC-9 jig (J-6082-393-C, Note4). To operate the adjustment remote commander, connect the power supply terminal of CPC-9 jig to the DC power supply (6.0 to 7.2Vdc).

The following table shows the Pin No. and signal name of CN801.

Note 4: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjustment remote commander.

Pin No.	Signal Name	Pin No.	Signal Name
1	MC PA05	10	UNREG
2	MC TRST	11	LANC IN
3	MC TDI	12	LANC OUT
4	REG GND	13	MC TCK
5	HD	14	CV OUT
6	SYS V	15	MC TDO
7	HSY	16	MC TMS
8	COM	17	NT/XPAL
9	VG	18	MC SYS

Table 5-1-6.

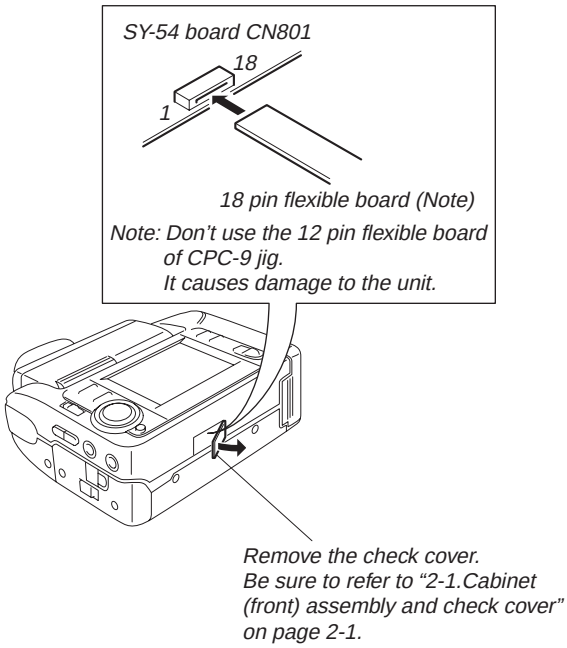

SY-54 board CN801
18
1
18 pin flexible board (Note)
Note: Don't use the 12 pin flexible board of CPC-9 jig.
It causes damage to the unit.
Remove the check cover.
Be sure to refer to "2-1.Cabinet (front) assembly and check cover" on page 2-1.

Fig.5-1-17.

1. LCD Initial Data Input

Mode	PLAY
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	1C, 1D, 80 to 88, 8D to 8F

Adjusting method:

1) Select page: 0, address:01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address:01, and set data: 00.

Address	Data	Remark
1C	00	Fixed data
1D	2C	Fixed data
80	BC	Bright adj.
81	80	Color adj.
82	B9	White balance adj.
83	B7	White balance adj.
84	BE	Contrast adj.
85	C8	D range adj.
86	7C	V-COM level adj.
87	50	VCO adj. (NTSC) Fixed data (PAL)
88	74	V-COM adj.
8D	50	VCO adj. (PAL) Fixed data (NTSC)
8E	13	Fixed data
8F	11	Fixed data

2. VCO Adjustment (SY-54 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑦ of CN801 (HSY)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	87 (NTSC) 8D (PAL)
Specified Value	f = 15734 ± 30Hz (NTSC) f = 15625 ± 30Hz (PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 01.
3) For NTSC model, select page: D, address: 87, change the data and set the frequency (f) to the specified value.
   For PAL model, select page: D, address: 8D, change the data and set the frequency (f) to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

3. D Range Adjustment (SY-54 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN801 (VG) External trigger: Pin ⑧ of CN801 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	85
Specified Value	A = 3.62 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: 85, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

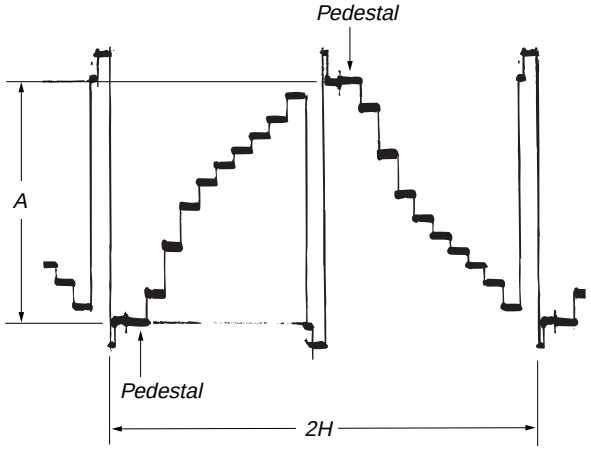


Fig.5-1-18.

4. Bright Adjustment (SY-54 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN801 (VG) External trigger: Pin ⑧ of CN801 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	80
Specified Value	A = 2.17 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: 2, address: 10, and set data: 01.
4) Select page: D, address: 80, change the data and set the voltage (A) between the pedestal and GAMMA1 limiter level to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 2, address: 10, and set data: 00.
7) Select page: 5, address: F1, set data: 00.
8) Select page: 0, address: 01, and set data: 00.

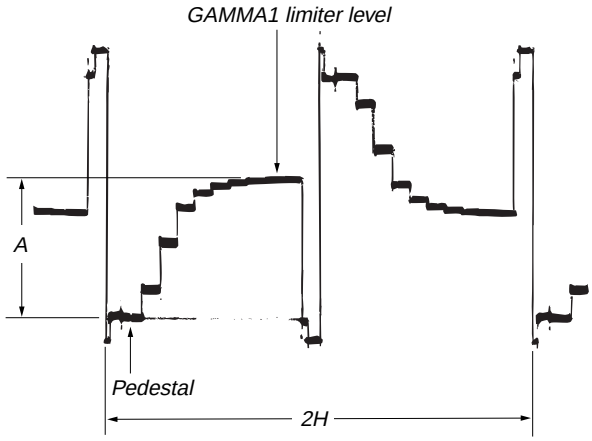


Fig.5-1-19.

5. Contrast Adjustment (SY-54 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN801 (VG) External trigger: Pin ⑧ of CN801 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	84
Specified Value	A = 3.31 ± 0.07V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: 84, change the data and set the voltage (A) between the 10 steps peak and pedestal to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

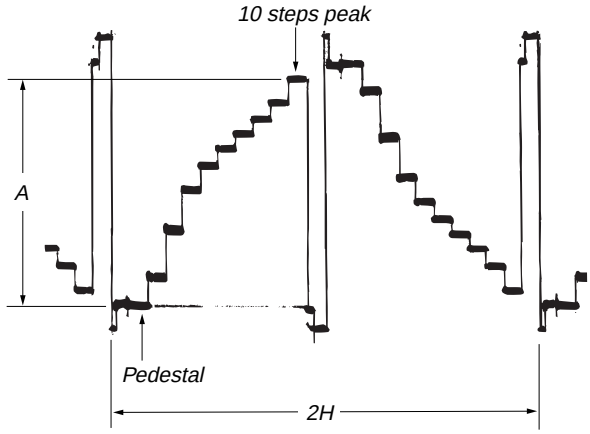


Fig.5-1-20.

6. Color Adjustment (SY-54 board)

Set the color saturation to the standard value. If deviated, the color will be to dark or light.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN801 (VG) External trigger: Pin ⑧ of CN801 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	81
Specified Value	A= 544 ± 50mV

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 04.
3) Select page: D, address: 81, change the data and set the voltage (A) between the white 100% (Reference level) and green to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

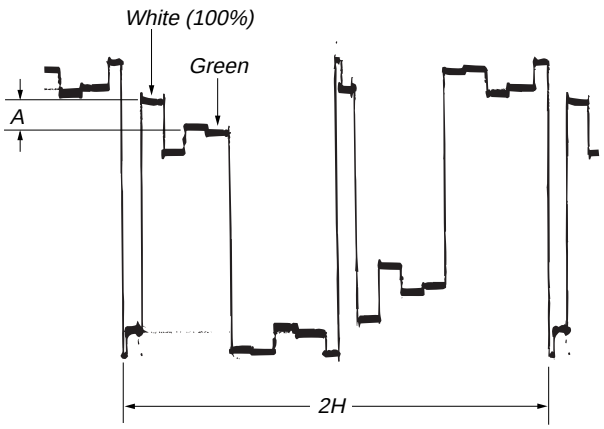


Fig.5-1-21.

7. V-COM Level Adjustment (SY-54 board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑧ of CN801 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	86
Specified Value	A= 6.50 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: 86, change the data and set the COM signal level (A) to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

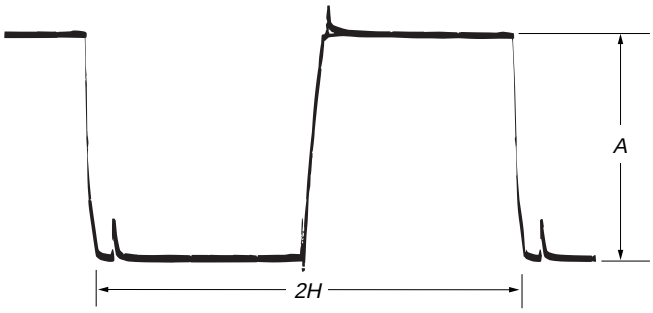


Fig.5-1-22.

8. V-COM Adjustment (SY-54 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	88
Specified Value	The brightness difference between the section A and section B is minimum.

Note 1 : Perform "Bright Adjustment" and "Contrast Adjustment" before this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: FF, and check the data.
   If the data is "01".
   Select page: 5, address: F1, set data: 08 or 09.
   If the data is other than "01".
   Select page: 5, address: F1, set data: 01.
   Select page: 2, address: 10, set data: 02.
3) Select page: D, address: 88, change the data so that the brightness of the section A and that of the section B is equal.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 2, address: 10, set data: 00.
7) Select page: 0, address: 01, and set data: 00.

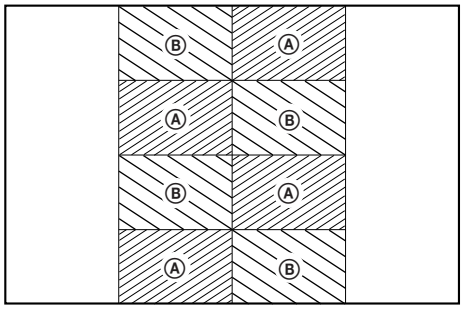


Fig.5-1-23.

9. White Balance Adjustment (SY-54 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	82, 83
Specified Value	The LCD screen should not be colored.

Note 1: Use the AC power adaptor during this adjustment.
Note 2: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC802

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 02.
3) Select page: D, address: 82 and 83, set the data to the initial value.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	82	83
Data	B9	B7

4) Check that the LCD screen is not colored. If colored, change the data of page: D, address: 82 and 83 so that the LCD screen is not colored.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

1-6. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Battery End Adjustment (SY-54 board)

Check the battery end voltage.

Mode	STILL
Subject	Arbitrary
Measurement Point	Display data of page: 2, address: 51
Measuring Instrument	Adjustment remote commander
Adjustment Page	D
Adjustment Address	30 to 34, 4A

Connection:

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-1-24.

Adjusting method:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 3.5 ± 0.1Vdc.
2) Turn off the power supply.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Turn on the power supply.
5) Insert the memory stick to the unit, and set to the STILL mode.
6) Select page: 0, address: 01, and set data: 01.
7) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 3.20 ± 0.01Vdc.
8) Select page: 2, address: 51, read the data, and this data is named Dref.
9) Select page: D, address: 30, set data: Dref, and press the PAUSE button of the adjustment remote commander.
10) Convert Dref to decimal notation, and obtain Dref'. (Refer to Table 5-2-1. "Hexadecimal-decimal conversion table" of "5-2. Service mode")
11) Calculate D_{31}', D_{32}', D_{33}', D_{34}' and D_{4A}' using following equations (decimal calculation), convert it to a hexadecimal number, and input each adjustment address.
    - Address: 31 D_{31}' = Dref'+3
    - Address: 32 D_{32}' = Dref'+10
    - Address: 33 D_{33}' = Dref'+10
    - Address: 34 D_{34}' = Dref'+10
    - Address: 4A D_{4A}' = Dref'+17

    Note: After setting each data, be sure to press the PAUSE button.
12) Select page: 0, address: 01, and set data: 00.

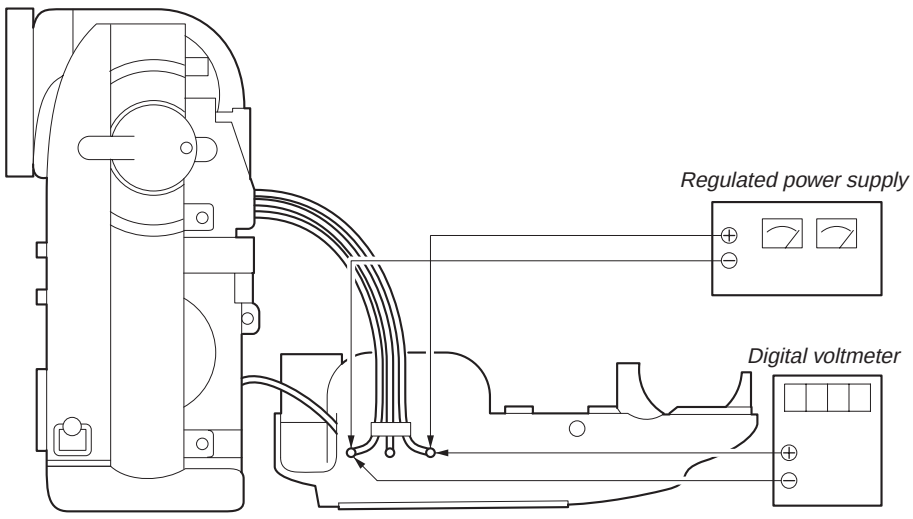


Fig.5-1-24.

5-2. SERVICE MODE

2-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the adjustment remote commander

1) Connect the adjustment remote commander to the SY-54 board CN801 via CPC-9 jig (J-6082-393-C). To operate the adjustment remote commander, connect the DC input terminal of CPC-9 jig to the DC power supply (6.0 to 7.2Vdc).
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-2-1.

Fig. 5-2-1.

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

   - Changing the address
     The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (B, D, E, F page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply once.

2. Precautions upon using the adjustment remote commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

2-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table ②

Lower digit of hexadecimal / Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (C)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (C)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-2-1.

2-3. SERVICE MODE

1. Setting the Test Mode

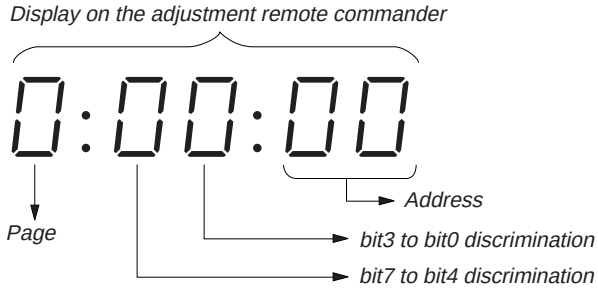
Page D	Address 10

Data	Function
00	Normal
01	Forced STILL mode power ON
02	Forced PLAY mode power ON
03	Forced MOVIE mode power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to “00”, and press the PAUSE button of the adjustment remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Bit value discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (R)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

3. Switch check (1)

Page 2	Address 43

Bit	Function	When bit value=1	When bit value=0
0	XPOWER SW (MS block)	OFF	ON
1	XCAM/PLAY SW (MS block)	PLAY	CAMERA
2	SHUTTR SW (MS block)	OFF	ON
3	XSHUTTER LOCK SW (MS block)	OFF	ON
4	MEMORY STICK IN SW (MS block)	IN	OUT
5			
6			
7	XSTILL/MOVIE SW (MS block)	MOVIE	STILL

Using method:

1) Select page: 2, address: 43.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

4. Switch check (2)

Page 2	Address 54 to 56

Using method:

1) Select page: 2, address: 54 to 56.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data						
	00 to 13	14 to 3A	3B to 63	64 to 90	91 to BC	BD to E8	E9 to FF
54 (KEY AD 0) (IC603 ⑱)	ZOOM + (MS block)	ZOOM – (MS block)				LENS REVERSE (MS block)	LENS NORMAL (MS block)
55 (KEY AD 1) (IC603 ⑲)	CONTROL DOWN (HF block)	CONTROL UP (HF block)	DISPLAY (HF block)	LCD BRIGHT + (HF block)	LCD BRIGHT – (HF block)		No key input
56 (KEY AD 2) (IC603 ⑳)	CONTROL RIGHT (HF block)	CONTROL LEFT (HF block)	CONTROL SET (HF block)	MACRO (HF block)	FLASH (HF block)	LCD BACKLIGHT OFF (HF block)	LCD BACKLIGHT ON (HF block)

5. LED check

Page 2	Address 06	Bit1

Using method:

1) Select page: 2, address: 06, and set the bit value of Bit1 to “1”.
2) Check that all LED except for the ACCESS LED are lit.
3) Select page: 2, address: 06, and set the bit value of Bit1 to “0”.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

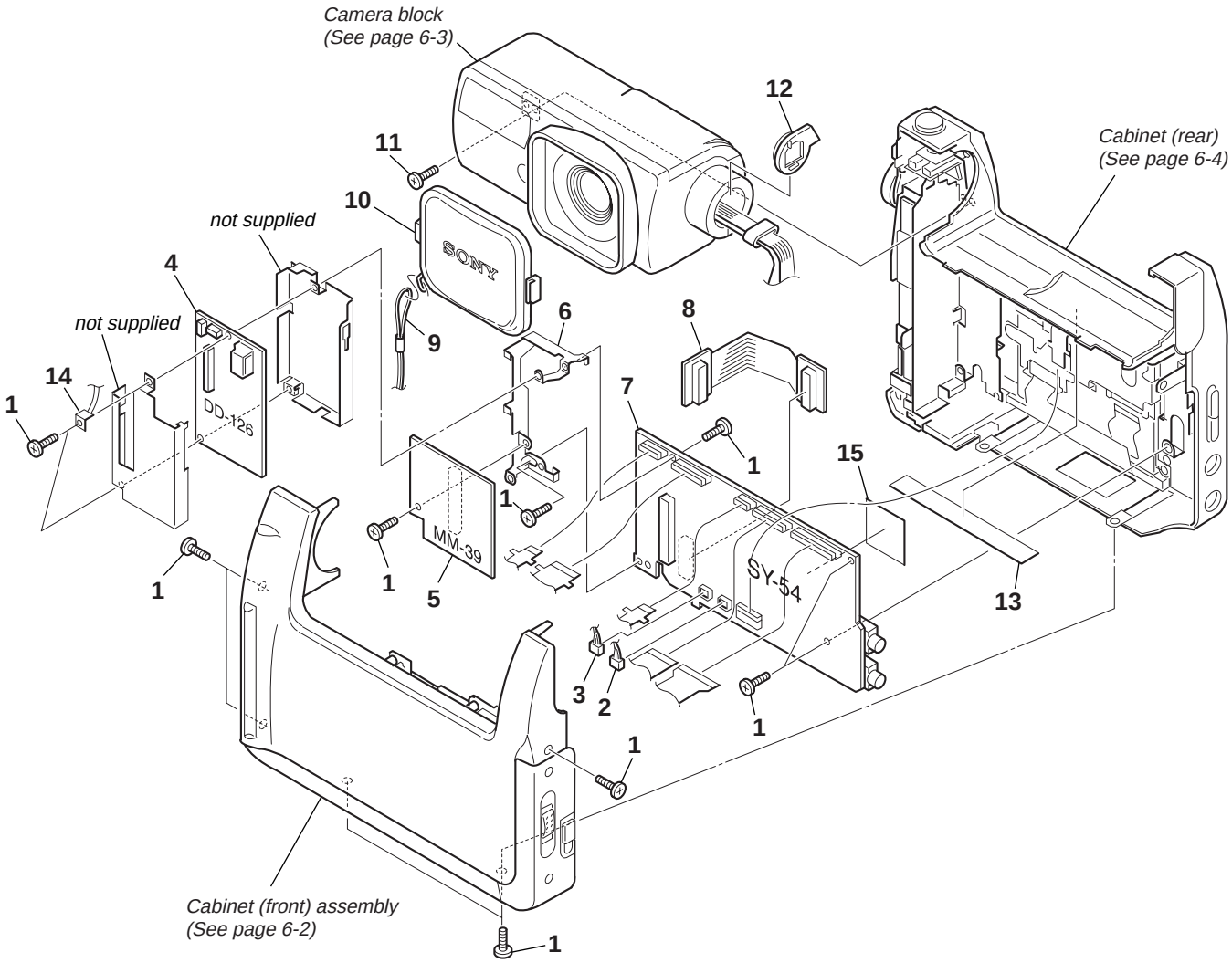
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  CND : Canadian model
  JE : Tourist model
  AUS : Australian model
  HK : Hong Kong model
  CN : Chinese model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

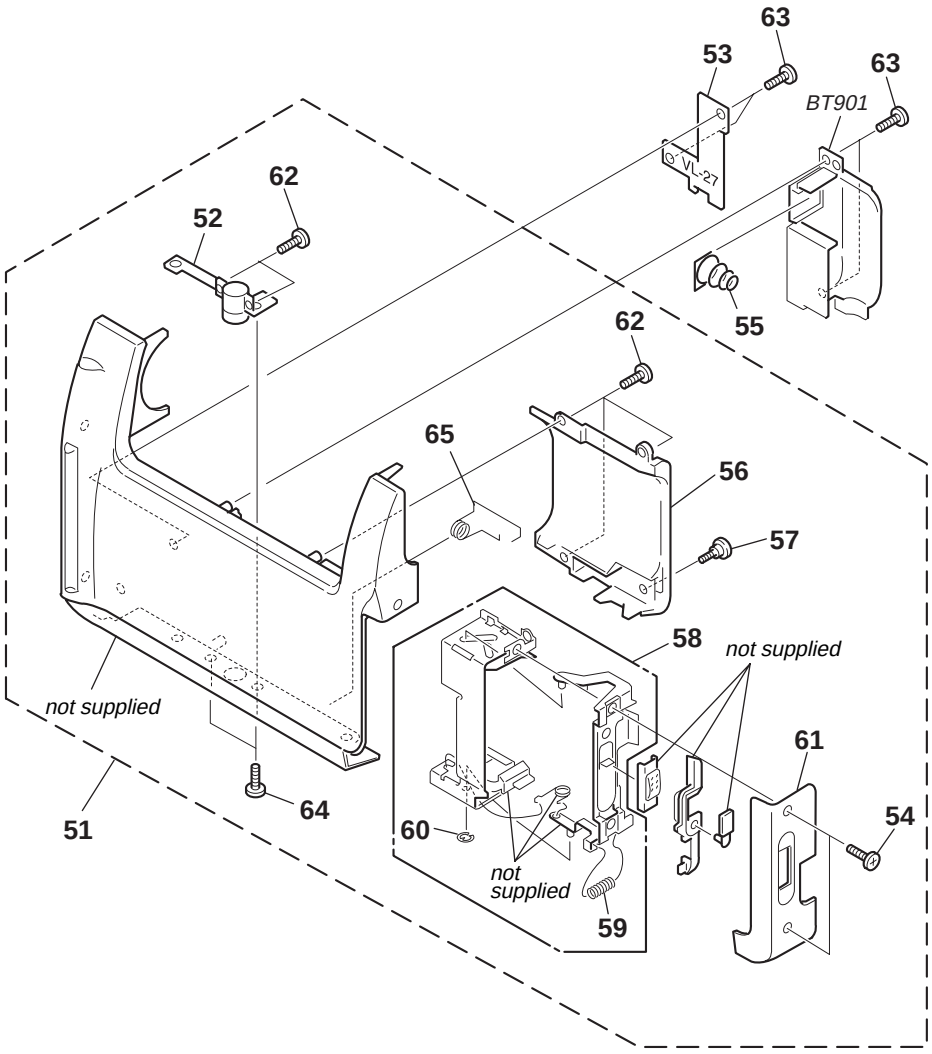
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. OVERALL SECTION



Ref. No.	Part No.	Description	Remarks
1	3-989-735-51	SCREW (M1.7), LOCK ACE, P2	
2	1-959-605-11	HARNESS (SV-110)	
3	1-959-606-11	HARNESS (SS-72)	
4	A-7074-056-A	DD-126 BOARD, COMPLETE(F55)	
4	A-7074-060-A	DD-126 BOARD, COMPLETE(F55E)	
5	A-7074-069-A	MM-39 BOARD, COMPLETE (SERVICE)(F55)	
5	A-7074-070-A	MM-39 BOARD, COMPLETE (SERVICE)(F55E)	
* 6	3-055-002-01	FRAME, DD	
7	A-7074-053-A	SY-54 BOARD, COMPLETE(F55)	
7	A-7074-057-A	SY-54 BOARD, COMPLETE(F55E)	
8	1-673-451-21	FP-109 FLEXIBLE BOARD	
9	X-3949-706-1	STRAP ASSY, LENS CAP	
10	X-3949-596-1	CAP ASSY, LENS	
11	3-056-092-01	SCREW, HEAD (2 LOCK) TAPPING	
12	3-055-027-01	FLEXIBLE STABILIZER	
* 13	3-056-033-01	SHEET, FLEXIBLE RETAINER	
14	1-959-947-11	HARNESS (DC-67)	
* 15	3-056-172-01	KT SHEET	

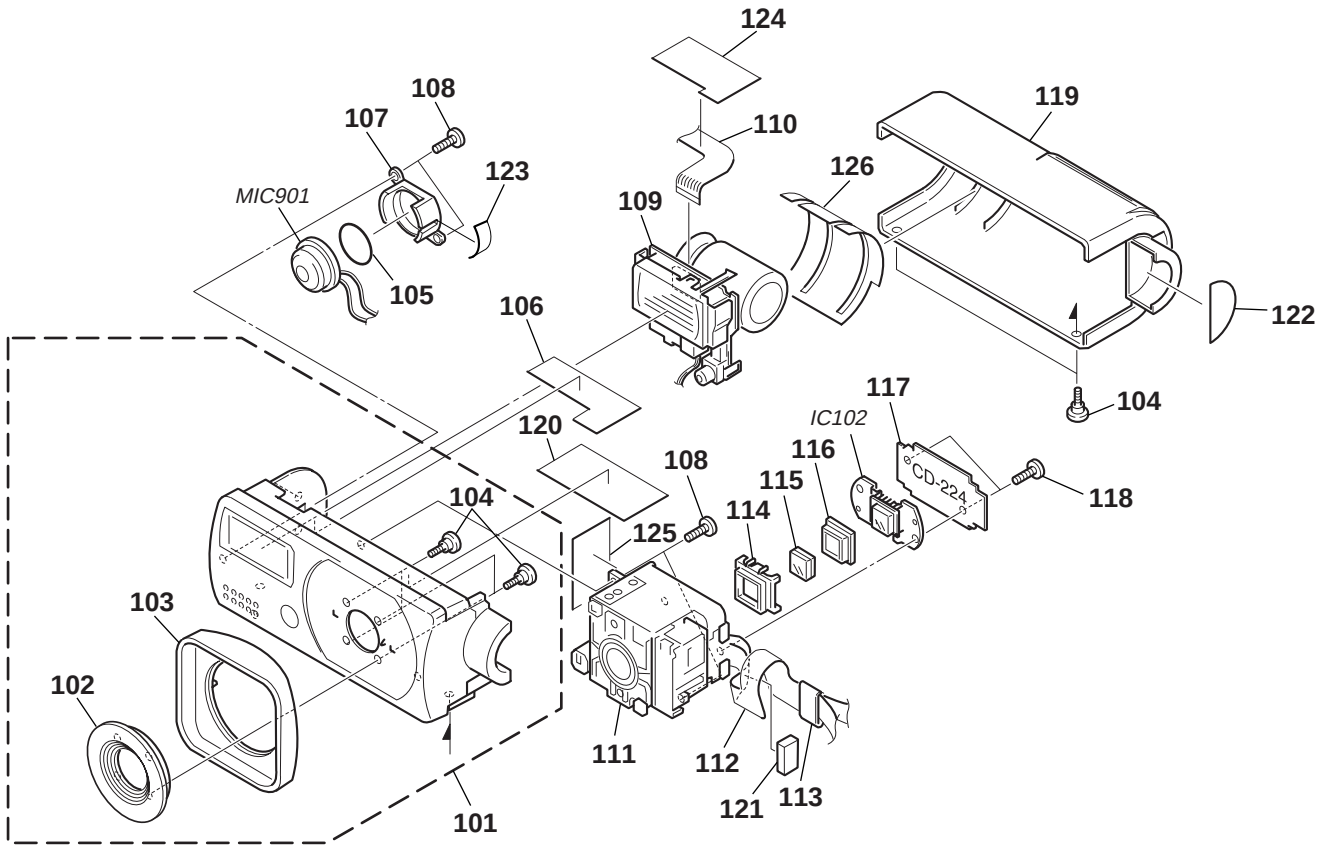
6-1-2. CABINET (FRONT) SECTION



Ref. No.	Part No.	Description	Remarks
51	X-3949-590-1	CABINET (FRONT) ASSY	
52	3-054-984-01	TRIPOD	
53	A-7074-055-A	VL-27 BOARD, COMPLETE(F55)	
53	A-7074-059-A	VL-27 BOARD, COMPLETE(F55E)	
54	3-989-735-61	SCREW (M1.7), LOCK ACE, P2	
* 55	3-054-937-01	SPRING, BT RELEASE	
* 56	3-054-960-01	COVER, BATTERY	
57	3-054-938-01	SCREW, STEP	
* 58	X-3949-591-1	ARM ASSY, BATTERY LID	

Ref. No.	Part No.	Description	Remarks
59	3-050-594-01	SPRING, COMPRESSION	
60	7-624-102-04	STOPRING 1.5, TYPE -E	
61	3-054-961-01	LID,BATTERY	
62	3-355-424-21	SCREW, TAPPING	
63	3-056-092-01	SCREW, HEAD (2 LOCK) TAPPING	
64	3-989-735-51	SCREW (M1.7), LOCK ACE, P2	
65	3-056-262-01	SPRING, BRAKE	
BT901	1-694-531-11	TERMINAL BOARD, BATTERY	

6-1-3. CAMERA BLOCK SECTION



Be sure to read “Precautions upon replacing CCD imager” on page 4-6 when changing the CCD imager.

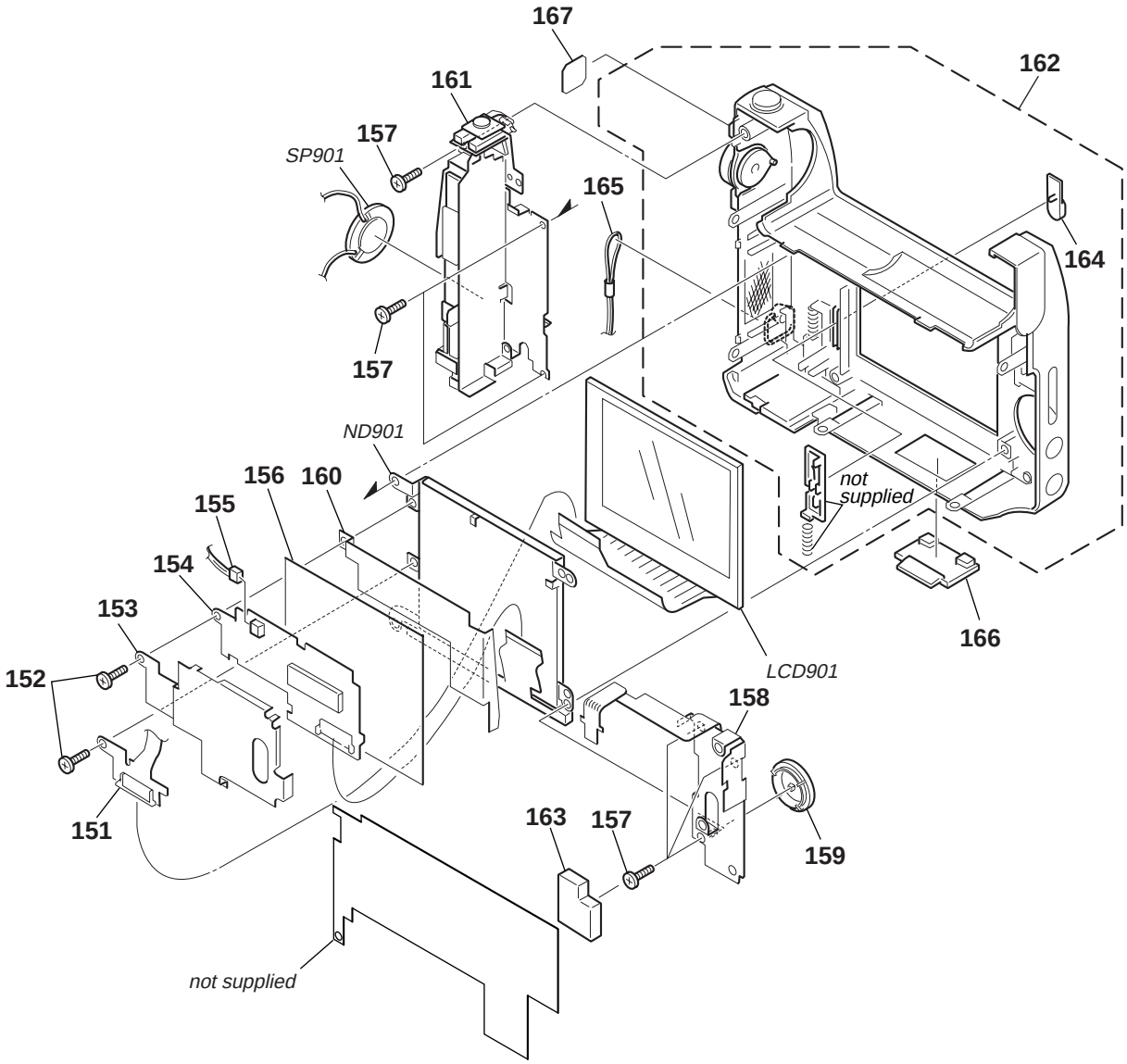
Ref. No.	Part No.	Description	Remarks
101	X-3949-592-1	BASE ASSY, LENS	
102	3-054-947-01	RING, FIXED	
103	3-055-006-01	HOOD, ORNAMENT	
104	3-054-938-01	SCREW, STEP	
* 105	3-056-170-01	SHEET (D), SOUND ABSORPTION	
* 106	3-056-037-01	SHEET (A), ELECTROSTATIC	
107	3-054-977-01	RETAINER, MICROPHONE	
108	3-056-092-01	SCREW, HEAD (2 LOCK) TAPPING	
⚠ 109	1-418-340-11	FLASH UNIT	
110	1-673-450-11	FP-108 FLEXIBLE BOARD	
111	A-7030-985-A	LENS ASSY	
112	1-673-449-11	FP-107 FLEXIBLE BOARD	
113	1-500-226-11	BEAD, FERRITE	
114	3-054-554-11	ADAPTOR (K), CCD FITTING	
115	1-758-319-21	FILTER BLOCK, OPTICAL	

Ref. No.	Part No.	Description	Remarks
116	3-054-555-11	RUBBER (K), SEAL	
117	A-7073-995-A	CD-224 BOARD, COMPLETE	
118	3-318-203-11	SCREW (B1.7X6), TAPPING	
119	X-3949-593-1	CABINET (REAR) ASSY, LENS(F55)	
119	X-3949-598-1	CABINET (REAR) ASSY, LENS(F55E)	
* 120	3-056-038-01	SHEET (B), ELECTROSTATIC	
* 121	3-056-034-01	CUSHION, FLEXIBLE	
122	3-056-455-01	SHEET, FLEXIBLE ROTARY	
* 123	3-056-169-01	SHEET (C), SOUND ABSORPTION	
* 124	3-056-037-01	SHEET (A), ELECTROSTATIC	
* 125	3-056-168-01	SHEET (B), SOUND ABSORPTION	
* 126	3-056-167-01	SHEET (A), SOUND ABSORPTION	
IC102	A-7030-987-A	CCD BLOCK ASSY (CCD IMAGER)	
MIC901	1-542-394-11	MICROPHONE UNIT	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-4. CABINET (REAR) SECTION



Ref. No.	Part No.	Description	Remarks
151	1-673-452-21	FP-110 FLEXIBLE BOARD	
152	3-056-030-01	ACE(M1.7),0 PLATE 2 MAIN LOCK	
* 153	X-3949-855-1	CASE ASSY, BL SHIELD	
⚠154	1-418-237-12	TRANSFORMER UNIT, INVERTER	
155	1-959-604-12	HARNESS (DB-51)	
156	3-054-948-01	SHEET, BACK LIGHT	
157	3-056-092-01	SCREW, HEAD (2 LOCK) TAPPING	
158	1-418-338-11	SWITCH BLOCK, CONTROL (HF)	
159	3-055-028-01	KNOB, FUNCTION	
* 160	3-055-916-01	SHEET, SHIELD	

Ref. No.	Part No.	Description	Remarks
161	1-418-339-11	SWITCH BLOCK, CONTROL (MS)	
162	X-3949-594-1	CABINET (REAR) ASSY	
* 163	3-055-915-01	CUSHION, HF	
164	3-054-992-01	KNOB, POWER	
165	3-050-664-11	STRAP, HAND	
166	3-055-029-01	COVER, CHECK	
* 167	3-056-467-01	SHEET(C), ELECTROSTATIC	
LCD901	1-803-549-21	MODULE, CRYSTAL INDICATION	
⚠ND901	1-517-878-11	TUBE, FLUORESCENT,COLD CATHODE	
SP901	1-529-174-11	SPEAKER (2.0 CM)	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Abbreviation
  CND : Canadian model
  JE : Tourist model
  AUS : Australian model
  HK : Hong Kong model
  CN : Chinese model

Ref. No.	Part No.	Description			Remarks
	A-7073-995-A	CD-224 BOARD, COMPLETE			
		**********			
		(Ref.No.:3000 Series)			
		(IC102 is not included in this complete board.)			
		< CAPACITOR >			
C101	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C102	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C103	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C104	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C105	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C106	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C107	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C108	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C109	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C110	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C111	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C112	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C115	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C116	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN101	1-785-902-21	CONNECTOR, FFC/FPC (ZIF) 23P			
CN102	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P			
		< IC >			
IC101	8-759-339-63	IC NJM2118V-TE2			
IC102	A-7030-987-A	CCD BLOCK ASSY (CCD IMAGER)			
		< COIL >			
L101	1-414-771-91	INDUCTOR CHIP	10uH		
L102	1-414-757-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q101	8-729-037-74	TRANSISTOR UN9213J-(K8).SO			
Q102	8-729-117-73	TRANSISTOR 2SC4178-F13F14-T1			
		< RESISTOR >			
R101	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R102	1-218-951-11	RES,CHIP	680	5%	1/16W
R103	1-218-941-11	RES,CHIP	100	5%	1/16W
R104	1-218-989-11	RES,CHIP	1M	5%	1/16W
R105	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R106	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R107	1-218-990-11	SHORT 0			
R108	1-218-936-11	RES,CHIP	39	5%	1/16W
R109	1-218-936-11	RES,CHIP	39	5%	1/16W
R110	1-218-937-11	RES,CHIP	47	5%	1/16W
R111	1-218-990-11	SHORT 0			

Be sure to read "Precautions upon replacing CCD imager" on page 4-6 when changing the CCD imager.

Ref. No.	Part No.	Description			Remarks
	A-7074-056-A	DD-126 BOARD, COMPLETE(F55)			
		**********			
	A-7074-060-A	DD-126 BOARD, COMPLETE(F55E)			
		**********			
		(Ref.No.:2000 Series)			
		< CAPACITOR >			
C001	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C002	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C003	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C004	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C005	1-162-979-11	CERAMIC CHIP	0.0027uF	10%	50V
C006	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C008	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C009	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C010	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C011	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C012	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C013	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C014	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C015	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C016	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C017	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C018	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C019	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C022	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C023	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C024	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C025	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C026	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C027	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C028	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C029	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C030	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C031	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C032	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V

DD-126

Ref. No.	Part No.	Description			Remarks
C033	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C034	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C035	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C036	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C037	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C038	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C039	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C040	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C041	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C042	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C043	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C044	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C045	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C048	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C049	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C050	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C051	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C052	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C053	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C054	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C056	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C057	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C058	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C059	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C060	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C061	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
		< CONNECTOR >			
CN001	1-774-730-21	PIN, CONNECTOR (PC BOARD) 3P			
CN002	1-785-946-21	CONNECTOR 3P			
CN003	1-785-900-21	CONNECTOR 5P			
CN004	1-785-918-21	CONNECTOR, BOARD TO BOARD 40P			
		< DIODE >			
D001	8-719-074-08	DIODE MA4ZD03001S0			
D002	8-719-075-12	DIODE MA3XD21001S0			
D003	8-719-071-34	DIODE RB521S-30-TE61			
D004	8-719-074-08	DIODE MA4ZD03001S0			
D005	8-719-074-08	DIODE MA4ZD03001S0			
D006	8-719-074-08	DIODE MA4ZD03001S0			
D007	8-719-074-08	DIODE MA4ZD03001S0			
		< IC >			
IC001	8-759-581-99	IC MB3827PFV-G-BND-ER			
IC002	8-759-486-48	IC XC6372C351PR			
		< COIL >			
L001	1-416-510-21	INDUCTOR	100uH		
L002	1-416-344-11	INDUCTOR	10uH		
L003	1-416-345-11	INDUCTOR	22uH		
L004	1-416-345-11	INDUCTOR	22uH		
L005	1-416-345-11	INDUCTOR	22uH		
L006	1-414-751-11	INDUCTOR	1uH		
L007	1-414-751-11	INDUCTOR	1uH		
L008	1-414-392-21	INDUCTOR	1uH		
L009	1-414-753-91	INDUCTOR	4.7uH		
L010	1-414-756-11	INDUCTOR	47uH		

Ref. No.	Part No.	Description			Remarks
L011	1-414-396-21	INDUCTOR	4.7uH		
L012	1-414-757-11	INDUCTOR	100uH		
L013	1-414-757-11	INDUCTOR	100uH		
L014	1-414-392-21	INDUCTOR	1uH		
L015	1-414-756-11	INDUCTOR	47uH		
L016	1-414-757-11	INDUCTOR	100uH		
		< IC LINK >			
⚠PS001	1-533-761-21	LINK, IC (SMD) 1.4A			
⚠PS002	1-533-761-21	LINK, IC (SMD) 1.4A			
⚠PS003	1-533-761-21	LINK, IC (SMD) 1.4A			
⚠PS004	1-533-761-21	LINK, IC (SMD) 1.4A			
		< TRANSISTOR >			
Q002	8-729-427-16	TRANSISTOR XP4113-TXE			
Q003	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO			
Q004	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO			
Q005	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO			
Q006	8-729-162-13	TRANSISTOR 2SC1621-T1B3			
Q007	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO			
Q008	8-729-162-13	TRANSISTOR 2SC1621-T1B3			
Q009	8-729-043-94	TRANSISTOR CPH3106-PM-TL			
Q010	8-729-043-94	TRANSISTOR CPH3106-PM-TL			
Q011	8-729-049-11	TRANSISTOR CPH3206-TL			
Q012	8-729-047-74	TRANSISTOR CPH5701-TL			
Q013	8-729-047-74	TRANSISTOR CPH5701-TL			
Q014	8-729-024-48	TRANSISTOR 2SK1830-TE85L			
Q015	8-729-048-19	TRANSISTOR CPH5704-TL			
Q016	8-729-046-00	TRANSISTOR CPH6301-TL			
Q017	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO			
Q019	8-729-044-84	TRANSISTOR CPH3403-TL			
Q020	8-729-044-84	TRANSISTOR CPH3403-TL			
Q021	8-729-048-19	TRANSISTOR CPH5704-TL			
Q022	8-729-048-19	TRANSISTOR CPH5704-TL			
Q023	8-729-048-18	TRANSISTOR CPH5601-TL			
Q024	8-729-427-46	TRANSISTOR XP4213-TXE			
Q025	8-729-037-74	TRANSISTOR UN9213J-(K8).SO			
Q029	8-729-427-46	TRANSISTOR XP4213-TXE			
Q030	8-729-037-71	TRANSISTOR UN9210J-(K8).SO			
Q031	8-729-042-57	TRANSISTOR UN9110J-(K8).SO			
Q032	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO			
Q033	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO			
		< RESISTOR >			
R001	1-208-939-11	RES,CHIP	150K	0.50%	1/16W
R002	1-208-721-11	RES,CHIP	39K	0.50%	1/16W
R003	1-218-977-11	RES,CHIP	100K	5%	1/16W
R004	1-208-711-11	RES,CHIP	15K	0.50%	1/16W
R005	1-208-711-11	RES,CHIP	15K	0.50%	1/16W
R006	1-208-699-11	RES,CHIP	4.7K	0.50%	1/16W
R007	1-208-711-11	RES,CHIP	15K	0.50%	1/16W
R008	1-218-970-11	RES,CHIP	27K	5%	1/16W
R010	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R011	1-218-973-11	RES,CHIP	47K	5%	1/16W

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
R012	1-208-719-11	RES,CHIP	33K	0.50%	1/16W
R013	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R014	1-218-970-11	RES,CHIP	27K	5%	1/16W
R015	1-218-973-11	RES,CHIP	47K	5%	1/16W
R016	1-218-973-11	RES,CHIP	47K	5%	1/16W
R017	1-218-970-11	RES,CHIP	27K	5%	1/16W
R018	1-218-969-11	RES,CHIP	22K	5%	1/16W
R020	1-208-927-11	RES,CHIP	47K	0.5%	1/16W
R021	1-218-970-11	RES,CHIP	27K	5%	1/16W
R022	1-218-968-11	RES,CHIP	18K	5%	1/16W
R023	1-218-970-11	RES,CHIP	27K	5%	1/16W
R024	1-218-990-11	SHORT 0			
R025	1-218-969-11	RES,CHIP	22K	5%	1/16W
R026	1-218-973-11	RES,CHIP	47K	5%	1/16W
R027	1-218-969-11	RES,CHIP	22K	5%	1/16W
R028	1-218-972-11	RES,CHIP	39K	5%	1/16W
R029	1-218-970-11	RES,CHIP	27K	5%	1/16W
R030	1-208-711-11	RES,CHIP	15K	0.50%	1/16W
R031	1-218-942-11	RES,CHIP	120	5%	1/16W
R032	1-218-965-11	RES,CHIP	10K	5%	1/16W
R033	1-218-968-11	RES,CHIP	18K	5%	1/16W
R034	1-208-701-11	RES,CHIP	5.6K	0.50%	1/16W
R035	1-208-721-11	RES,CHIP	39K	0.50%	1/16W
R036	1-208-713-11	RES,CHIP	18K	0.50%	1/16W
R037	1-208-931-11	RES,CHIP	68K	0.50%	1/16W
R038	1-208-719-11	RES,CHIP	33K	0.50%	1/16W
R039	1-208-707-11	RES,CHIP	10K	0.50%	1/16W
R040	1-218-953-11	RES,CHIP	1K	5%	1/16W
R041	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R042	1-208-709-11	RES,CHIP	12K	0.50%	1/16W
R043	1-208-711-11	RES,CHIP	15K	0.50%	1/16W
R044	1-218-966-11	RES,CHIP	12K	5%	1/16W
R045	1-218-970-11	RES,CHIP	27K	5%	1/16W
R046	1-218-990-11	SHORT 0			
R047	1-208-711-11	RES,CHIP	15K	0.50%	1/16W
R049	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R050	1-208-909-11	RES,CHIP	8.2K	0.50%	1/16W
R051	1-208-711-11	RES,CHIP	15K	0.50%	1/16W
R052	1-218-970-11	RES,CHIP	27K	5%	1/16W
R053	1-218-968-11	RES,CHIP	18K	5%	1/16W
R054	1-218-945-11	RES,CHIP	220	5%	1/16W
R055	1-218-952-11	RES,CHIP	820	5%	1/16W
R056	1-218-951-11	RES,CHIP	680	5%	1/16W
R057	1-218-956-11	RES,CHIP	1.8K	5%	1/16W
R058	1-218-962-11	RES,CHIP	5.6K	5%	1/16W
R059	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R060	1-218-965-11	RES,CHIP	10K	5%	1/16W
R061	1-218-965-11	RES,CHIP	10K	5%	1/16W
R062	1-218-945-11	RES,CHIP	220	5%	1/16W
R063	1-218-945-11	RES,CHIP	220	5%	1/16W
R064	1-218-985-11	RES,CHIP	470K	5%	1/16W
R065	1-218-971-11	RES,CHIP	33K	5%	1/16W
R066	1-218-971-11	RES,CHIP	33K	5%	1/16W
R067	1-218-973-11	RES,CHIP	47K	5%	1/16W
R068	1-218-965-11	RES,CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R069	1-218-965-11	RES,CHIP	10K	5%	1/16W
R070	1-218-977-11	RES,CHIP	100K	5%	1/16W
R071	1-218-970-11	RES,CHIP	27K	5%	1/16W
R072	1-218-968-11	RES,CHIP	18K	5%	1/16W
R073	1-218-965-11	RES,CHIP	10K	5%	1/16W
R074	1-218-977-11	RES,CHIP	100K	5%	1/16W
R076	1-218-990-11	SHORT 0			
R077	1-218-977-11	RES,CHIP	100K	5%	1/16W
R078	1-218-973-11	RES,CHIP	47K	5%	1/16W
R079	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R080	1-216-864-11	METAL CHIP	0	5%	1/16W
		< TRANSFORMER >			
⚠T001	1-433-784-21	TRANSFORMER, DC-DC CONVERTER			
⚠T002	1-433-786-21	TRANSFORMER, DC-DC CONVERTER			
⚠T003	1-433-785-21	TRANSFORMER, DC-DC CONVERTER			
	A-7074-069-A	MM-39 BOARD, COMPLETE (SERVICE)(F55)			
		**********			
	A-7074-070-A	MM-39 BOARD, COMPLETE (SERVICE)(F55E)			
		**********			
		(Ref.No.:1000 Series)			
		< CAPACITOR >			
C451	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C452	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C453	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C454	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C455	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C456	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C457	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C458	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C459	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C460	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C461	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C462	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C463	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C464	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
		< CONNECTOR >			
CN451	1-785-914-21	CONNECTOR, BOARD TO BOARD 80P			
		< DIODE >			
D451	8-719-073-01	DIODE MA111-(K8).S0			
D452	8-719-073-01	DIODE MA111-(K8).S0			
		< FERRITE BEAD >			
FB452	1-414-228-11	INDUCTOR CHIP	0UH		
FB453	1-414-228-11	INDUCTOR CHIP	0UH		
* FB454	1-500-282-11	INDUCTOR CHIP	0UH		

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

MM-39 **SY-54**

Ref. No.	Part No.	Description			Remarks
		< IC >			
IC451	8-759-584-32	IC MB86189PFV-G-BND-ER			
IC452	8-759-271-88	IC TC7SHU04FU-TE85R			
IC453	8-759-196-97	IC TC7SH32FU			
IC454	8-759-586-09	IC MBM29LV800BA-10PFTN-FK-ER			
IC455	8-759-557-60	IC uPD4516161AG5-A10B-9NF			
IC455	8-759-567-37	IC MB81F161622B-80FN			
IC456	8-759-566-20	IC AK6440BH-E2			
IC457	8-759-566-18	IC AK6480BH-E2			
		< COIL >			
L451	1-414-754-11	INDUCTOR	10uH		
L452	1-414-754-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q451	8-729-037-74	TRANSISTOR UN9213J-(K8).SO			
Q453	8-729-037-74	TRANSISTOR UN9213J-(K8).SO			
Q454	8-729-032-00	TRANSISTOR 2SJ381-TD			
Q455	8-729-037-61	TRANSISTOR UN9113J-(K8).SO			
		< RESISTOR >			
R451	1-218-929-11	RES,CHIP	10	5%	1/16W
R452	1-218-929-11	RES,CHIP	10	5%	1/16W
R453	1-218-929-11	RES,CHIP	10	5%	1/16W
R454	1-218-929-11	RES,CHIP	10	5%	1/16W
R455	1-218-929-11	RES,CHIP	10	5%	1/16W
R456	1-218-929-11	RES,CHIP	10	5%	1/16W
R457	1-218-929-11	RES,CHIP	10	5%	1/16W
R458	1-218-964-11	RES,CHIP	8.2K	5%	1/16W
R459	1-218-953-11	RES,CHIP	1K	5%	1/16W
R460	1-218-929-11	RES,CHIP	10	5%	1/16W
R461	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R463	1-218-989-11	RES,CHIP	1M	5%	1/16W
R464	1-218-977-11	RES,CHIP	100K	5%	1/16W
R465	1-218-990-11	SHORT	0		
R466	1-218-990-11	SHORT	0		
R467	1-218-990-11	SHORT	0		
R468	1-218-990-11	SHORT	0		
R469	1-218-990-11	SHORT	0		
R470	1-218-990-11	SHORT	0		
R471	1-218-990-11	SHORT	0		
R472	1-218-990-11	SHORT	0		
R473	1-218-990-11	SHORT	0		
R474	1-218-990-11	SHORT	0		
R475	1-218-990-11	SHORT	0		
R476	1-218-985-11	RES,CHIP	470K	5%	1/16W
R478	1-218-977-11	RES,CHIP	100K	5%	1/16W
R479	1-218-985-11	RES,CHIP	470K	5%	1/16W
R480	1-218-977-11	RES,CHIP	100K	5%	1/16W
R481	1-216-864-11	METAL CHIP	0	5%	1/16W
R482	1-218-990-11	SHORT	0		
R483	1-218-941-11	RES,CHIP	100	5%	1/16W
R484	1-218-941-11	RES,CHIP	100	5%	1/16W
R485	1-218-977-11	RES,CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description			
		< VIBRATOR >			
X451	1-767-621-11	VIBRATOR, CERAMIC (16.93MHz)			
	A-7074-053-A	SY-54 BOARD, COMPLETE(F55)			
		**********			
	A-7074-057-A	SY-54 BOARD, COMPLETE(F55E)			
		**********			
		(Ref.No.:1000 Series)			
		< CAPACITOR >			
C151	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C152	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C154	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C155	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C156	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C157	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C158	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C160	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C161	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C162	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C163	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C164	1-164-845-11	CERAMIC CHIP	5PF	0.25PF	16V
C165	1-164-845-11	CERAMIC CHIP	5PF	0.25PF	16V
C166	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C167	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C168	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C169	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C170	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C171	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C172	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C173	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C174	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C175	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C176	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C177	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C178	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C179	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C180	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C181	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C182	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C183	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C184	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C185	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C201	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C205	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C206	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C207	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C208	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C209	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C210	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C211	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C212	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C213	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C214	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C216	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V

Ref. No.	Part No.	Description			Remarks
C217	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C218	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C219	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C220	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C222	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C223	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C224	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C225	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C251	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C252	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C253	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C257	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C258	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C259	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C260	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C261	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C262	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C263	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C264	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C265	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C268	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C269	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C270	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C271	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C272	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C273	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C274	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C276	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C281	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C282	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C283	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C284	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C285	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C286	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C287	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C288	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C289	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C290	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C291	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C292	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C293	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C301	1-113-500-11	TANTAL. CHIP	100uF	20%	10V
C302	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C303	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C304	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C306	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C307	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C308	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C309	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C310	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C311	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C313	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C315	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C316	1-104-848-11	TANTAL. CHIP	100uF	20%	4V
C318	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C319	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C351	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C352	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C353	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C354	1-164-849-11	CERAMIC CHIP	9PF	0.5PF	16V
C355	1-164-849-11	CERAMIC CHIP	9PF	0.5PF	16V
C356	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C357	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C358	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C359	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C361	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C362	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C363	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C364	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C365	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C367	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C368	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C369	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C370	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C371	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C374	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C375	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C376	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C377	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C501	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C502	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C503	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C506	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C507	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C509	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C605	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C606	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C607	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C608	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C610	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C611	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C612	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C615	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C616	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C620	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C624	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C626	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C628	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C629	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C630	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C631	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C632	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C633	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C634	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C635	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C636	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C637	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C638	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C639	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C640	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

SY-54

Ref. No.	Part No.	Description			Remarks
C641	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C642	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C643	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C644	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C645	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C646	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C701	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C702	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C703	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C704	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C706	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C707	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C708	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C709	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C710	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C711	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C712	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C713	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C714	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C715	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C718	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C719	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C720	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C722	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C723	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C724	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C725	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C726	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C727	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C728	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C729	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C730	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C731	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C732	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C733	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C734	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C735	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C737	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C739	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C740	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C741	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C742	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C743	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C801	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C802	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C803	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C804	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C805	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C806	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C807	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C808	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C810	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C811	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C812	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C813	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V

Ref. No.	Part No.	Description			Remarks
C814	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C815	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C816	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C817	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C902	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C903	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C904	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C905	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C906	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C907	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C908	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C909	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C911	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C913	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C915	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C916	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C917	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C918	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C919	1-107-689-21	TANTAL. CHIP	1uF	20%	35V
C920	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C927	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V

< CONNECTOR >

CN151	1-764-529-11	CONNECTOR, FFC/FPC (ZIF) 22P	
CN201	1-750-630-11	CONNECTOR, FFC/FPC (ZIF) 16P	
CN351	1-785-829-21	CONNECTOR, BOARD TO BOARD 80P	
CN601	1-785-916-21	CONNECTOR, BOARD TO BOARD 40P	
CN602	1-764-516-21	CONNECTOR, FFC/FPC (ZIF) 6P	
CN603	1-764-524-21	CONNECTOR, FFC/FPC (ZIF) 15P	
CN604	1-764-518-21	CONNECTOR, FFC/FPC (ZIF) 9P	
CN605	1-784-342-11	HOUSING, CONNECTOR 2P	
CN701	1-784-342-21	HOUSING, CONNECTOR 2P	
CN801	1-766-348-21	CONNECTOR, FFC/FPC 18P	
CN901	1-785-902-21	CONNECTOR, FFC/FPC (ZIF) 23P	

< DIODE >

D201	8-719-067-36	DIODE	MA3ZD1200LS0
D302	8-719-050-46	DIODE	RD6.8UM-T1B
D304	8-719-045-87	DIODE	MA4Z082WA-(TX).SO
D306	8-719-073-01	DIODE	MA111-(K8).S0
D307	8-719-073-01	DIODE	MA111-(K8).S0
D308	8-719-073-01	DIODE	MA111-(K8).SO
D309	8-719-159-96	DIODE	RD5.1UM-T1B
D310	8-719-159-96	DIODE	RD5.1UM-T1B
D351	8-719-045-87	DIODE	MA4Z082WA-(TX).SO
D352	8-719-045-87	DIODE	MA4Z082WA-(TX).SO
D353	8-719-073-01	DIODE	MA111-(K8).SO
D602	8-719-056-48	DIODE	1SS388(TPL3)
D604	8-719-056-48	DIODE	1SS388(TPL3)
D605	8-719-421-27	DIODE	MA728
D606	8-719-056-23	DIODE	1SS387-TPL3
D607	8-719-045-87	DIODE	MA4Z082WA-(TX).SO
D608	8-719-045-87	DIODE	MA4Z082WA-(TX).SO
D609	8-719-045-87	DIODE	MA4Z082WA-(TX).SO
D701	8-719-071-34	DIODE	RB521S-30-TE61
D702	8-719-071-34	DIODE	RB521S-30-TE61

Ref. No.	Part No.	Description	Remarks
D903	8-713-102-80	DIODE 1T369-01-T8A	
D904	8-719-976-96	DIODE MA8047-H-TX	
		< FERRITE BEAD >	
FB151	1-500-284-21	INDUCTOR CHIP 0UH	
FB152	1-414-228-11	INDUCTOR CHIP 0UH	
FB153	1-414-228-11	INDUCTOR CHIP 0UH	
FB154	1-500-284-21	INDUCTOR CHIP 0UH	
FB155	1-414-228-11	INDUCTOR CHIP 0UH	
FB156	1-500-283-11	INDUCTOR CHIP 0UH	
FB157	1-500-284-21	INDUCTOR CHIP 0UH	
FB158	1-500-283-11	INDUCTOR CHIP 0UH	
FB159	1-500-283-11	INDUCTOR CHIP 0UH	
FB160	1-500-284-21	INDUCTOR CHIP 0UH	
FB251	1-414-228-11	INDUCTOR CHIP 0UH	
FB252	1-414-228-11	INDUCTOR CHIP 0UH	
FB253	1-414-228-11	INDUCTOR CHIP 0UH	
FB254	1-414-228-11	INDUCTOR CHIP 0UH	
FB255	1-414-228-11	INDUCTOR CHIP 0UH	
FB301	1-500-284-21	INDUCTOR CHIP 0UH	
FB302	1-500-284-21	INDUCTOR CHIP 0UH	
FB303	1-500-284-21	INDUCTOR CHIP 0UH	
FB351	1-414-228-11	INDUCTOR CHIP 0UH	
FB352	1-414-228-11	INDUCTOR CHIP 0UH	
FB353	1-414-228-11	INDUCTOR CHIP 0UH	
FB355	1-414-228-11	INDUCTOR CHIP 0UH	
FB356	1-414-228-11	INDUCTOR CHIP 0UH	
FB501	1-414-228-11	INDUCTOR CHIP 0UH	
FB601	1-414-228-11	INDUCTOR CHIP 0UH	
FB602	1-414-228-11	INDUCTOR CHIP 0UH	
FB603	1-414-228-11	INDUCTOR CHIP 0UH	
FB604	1-414-228-11	INDUCTOR CHIP 0UH	
FB605	1-414-228-11	INDUCTOR CHIP 0UH	
FB606	1-218-990-11	SHORT 0 (Note)	
FB607	1-216-864-11	METAL CHIP 0 5% 1/16W	(Note)
FB608	1-216-864-11	METAL CHIP 0 5% 1/16W	(Note)
FB701	1-414-228-11	INDUCTOR CHIP 0UH	
FB706	1-414-228-11	INDUCTOR CHIP 0UH	
FB707	1-216-864-11	METAL CHIP 0 5% 1/16W	(Note)
FB708	1-216-864-11	METAL CHIP 0 5% 1/16W	(Note)
		< IC >	
IC151	8-752-397-43	IC CXD2470R-T4	
IC152	8-759-573-29	IC CCD1000Y-1/2K	
IC153	8-759-565-67	IC XC62FP3202PR	
IC201	8-759-579-97	IC uPD16833AGS-9JH	
IC202	8-759-337-40	IC NJM2904V(TE2)	
IC203	8-752-377-38	IC CXD2430N-T4	
IC204	8-759-338-78	IC BA10324AFV-E2	
IC206	8-759-426-25	IC MB88346LPFV-G-BND-ER	
IC251	8-759-586-38	IC MB91002LGA-G	
IC252	8-759-586-08	IC MB81F641642C-103LFN-ER	

Note : Resistors are mounted to the location where FB606, FB607, FB608, FB707, FB708 are printed.

Ref. No.	Part No.	Description	Remarks
IC301	8-759-582-18	IC NJM2538BV(TE2)	
IC351	8-759-585-34	IC HD6417612RSBP	
IC353	8-759-484-69	IC MAX3221CAE-TE2	
IC501	8-752-398-19	IC CXD3147R-T6	
IC601	8-759-525-51	IC S-80827HNNP-A9A-T2	
IC602	8-759-538-14	IC S-3513BEFS-TB	
IC603	8-759-586-40	IC S579602PZ-TEB	
IC605	8-759-525-53	IC RN5RZ31BA-TL	
IC606	8-759-466-71	IC S-80820ANNP-EDH-T2	
IC701	8-759-566-19	IC AK4518-VF-E2	
IC702	8-759-582-00	IC AN2904FHQ-EB	
IC703	8-759-547-46	IC MSM9831-104MAZ060	
IC801	8-759-530-19	IC MB40D001PFV-G-BND-ER	
IC802	8-759-539-27	IC IR3Y37A4	
IC803	8-759-196-97	IC TC7SH32FU-TE85R	
IC901	8-759-587-61	IC LZ9GH234	
IC902	8-759-327-01	IC NJM062V(TE2)	
		< JACK >	
J301	1-695-514-31	JACK (SMALL TYPE) 1P(A/V OUT)	
J351	1-695-514-11	JACK (SMALL TYPE) 1P(DIGITAL OUT)	
		< COIL >	
L152	1-414-754-11	INDUCTOR 10uH	
L154	1-414-754-11	INDUCTOR 10uH	
L201	1-414-771-91	INDUCTOR CHIP 10uH	
L202	1-414-771-91	INDUCTOR CHIP 10uH	
L203	1-414-771-91	INDUCTOR CHIP 10uH	
L204	1-414-754-11	INDUCTOR 10uH	
L252	1-414-754-11	INDUCTOR 10uH	
L253	1-414-754-11	INDUCTOR 10uH	
L254	1-414-756-11	INDUCTOR 47uH	
L261	1-414-754-11	INDUCTOR 10uH	
L301	1-414-402-11	INDUCTOR 47uH	
L302	1-414-754-11	INDUCTOR 10uH	
L351	1-414-754-11	INDUCTOR 10uH	
L352	1-414-754-11	INDUCTOR 10uH	
L353	1-414-754-11	INDUCTOR 10uH	
L501	1-414-770-91	INDUCTOR CHIP 4.7uH	
L502	1-414-754-11	INDUCTOR 10uH	
L601	1-414-754-11	INDUCTOR 10uH	
L701	1-414-754-11	INDUCTOR 10uH	
L702	1-414-406-11	INDUCTOR 220uH	
L703	1-414-754-11	INDUCTOR 10uH	
L704	1-414-754-11	INDUCTOR 10uH	
L801	1-414-757-11	INDUCTOR 100uH	
L802	1-414-078-11	INDUCTOR 10uH	
L901	1-414-754-11	INDUCTOR 10uH	
L902	1-414-754-11	INDUCTOR 10uH	
L903	1-412-951-11	INDUCTOR 10uH	
L905	1-412-949-21	INDUCTOR 6.8uH	
		< TRANSISTOR >	
Q201	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q202	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q203	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q251	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q252	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	

Ref. No.	Part No.	Description	Remarks
Q253	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q254	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q255	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q302	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q303	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q351	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q501	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q603	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q604	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q607	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q608	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q609	8-729-041-43	TRANSISTOR HN1L02FU(TE85R)	
Q610	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q701	8-729-042-74	TRANSISTOR UN9216J-(K8).SO	
Q702	8-729-037-61	TRANSISTOR UN9113J-(K8).SO	
Q703	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q704	8-729-041-51	TRANSISTOR FMMT617TA	
Q705	8-729-230-60	TRANSISTOR 2SA1586YG-TE85L	
Q903	8-729-230-63	TRANSISTOR 2SD1819A-QRS-TX	
Q904	8-729-420-24	TRANSISTOR 2SB1218A-QRS-TX	
Q905	8-729-230-63	TRANSISTOR 2SD1819A-QRS-TX	
Q906	8-729-420-24	TRANSISTOR 2SB1218A-QRS-TX	

< RESISTOR >

Ref. No.	Part No.	Description			Remarks
R153	1-216-864-11	METAL CHIP	0	5%	1/16W
R154	1-218-947-11	RES,CHIP	330	5%	1/16W
R155	1-218-941-11	RES,CHIP	100	5%	1/16W
R157	1-216-864-11	METAL CHIP	0	5%	1/16W
R158	1-218-977-11	RES,CHIP	100K	5%	1/16W
R160	1-218-947-11	RES,CHIP	330	5%	1/16W
R167	1-218-947-11	RES,CHIP	330	5%	1/16W
R169	1-218-947-11	RES,CHIP	330	5%	1/16W
R185	1-218-990-11	SHORT	0		
R187	1-218-990-11	SHORT	0		
R201	1-218-973-11	RES,CHIP	47K	5%	1/16W
R202	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R203	1-216-797-11	METAL CHIP	10	5%	1/16W
R204	1-218-953-11	RES,CHIP	1K	5%	1/16W
R205	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R206	1-218-977-11	RES,CHIP	100K	5%	1/16W
R207	1-218-965-11	RES,CHIP	10K	5%	1/16W
R208	1-218-977-11	RES,CHIP	100K	5%	1/16W
R209	1-218-973-11	RES,CHIP	47K	5%	1/16W
R210	1-218-975-11	RES,CHIP	68K	5%	1/16W
R211	1-218-947-11	RES,CHIP	330	5%	1/16W
R212	1-218-977-11	RES,CHIP	100K	5%	1/16W
R213	1-218-969-11	RES,CHIP	22K	5%	1/16W
R214	1-218-954-11	RES,CHIP	1.2K	5%	1/16W
R215	1-218-969-11	RES,CHIP	22K	5%	1/16W
R216	1-218-980-11	RES,CHIP	180K	5%	1/16W
R217	1-218-965-11	RES,CHIP	10K	5%	1/16W
R218	1-218-966-11	RES,CHIP	12K	5%	1/16W
R219	1-218-977-11	RES,CHIP	100K	5%	1/16W
R221	1-218-980-11	RES,CHIP	180K	5%	1/16W
R222	1-218-958-11	RES,CHIP	2.7K	5%	1/16W
R223	1-218-980-11	RES,CHIP	180K	5%	1/16W
R230	1-208-712-11	RES,CHIP	16K	0.50%	1/16W
R231	1-208-683-11	RES,CHIP	1K	0.50%	1/16W
R234	1-218-990-11	SHORT	0		

Ref. No.	Part No.	Description			Remarks
R251	1-218-990-11	SHORT	0		
R252	1-218-990-11	SHORT	0		
R253	1-218-990-11	SHORT	0		
R254	1-218-990-11	SHORT	0		
R257	1-218-990-11	SHORT	0		
R260	1-218-990-11	SHORT	0		
R261	1-218-990-11	SHORT	0		
R262	1-218-990-11	SHORT	0		
R263	1-208-663-11	RES,CHIP	150	0.50%	1/16W
R264	1-208-663-11	RES,CHIP	150	0.50%	1/16W
R265	1-208-663-11	RES,CHIP	150	0.50%	1/16W
R266	1-218-958-11	RES,CHIP	2.7K	0.50%	1/16W
R272	1-218-990-11	SHORT	0		
R273	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R275	1-218-990-11	SHORT	0		
R276	1-218-953-11	RES,CHIP	1K	5%	1/16W
R280	1-469-082-21	FERRITE	600UH (Note 1)		
R281	1-469-082-21	FERRITE	600UH (Note 1)		
R282	1-469-082-21	FERRITE	600UH (Note 1)		
R283	1-218-953-11	RES,CHIP	1K	5%	1/16W
R284	1-218-953-11	RES,CHIP	1K	5%	1/16W
R285	1-218-953-11	RES,CHIP	1K	5%	1/16W
R286	1-218-973-11	RES,CHIP	47K	5%	1/16W
R288	1-218-953-11	RES,CHIP	1K	5%	1/16W
R290	1-218-990-11	SHORT	0		
R301	1-218-965-11	RES,CHIP	10K	5%	1/16W
R302	1-218-965-11	RES,CHIP	10K	5%	1/16W
R303	1-218-989-11	RES,CHIP	1M	5%	1/16W
R304	1-218-953-11	RES,CHIP	1K	5%	1/16W
R307	1-218-939-11	RES,CHIP	68	5%	1/16W
R308	1-216-864-11	METAL CHIP	0	5%	1/16W
R309	1-218-953-11	RES,CHIP	1K	5%	1/16W
R312	1-218-969-11	RES,CHIP	22K	5%	1/16W
R315	1-164-218-11	CERAMIC CHIP	180PF	5%	50V (Note 2)
R317	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (Note 2)
R352	1-218-973-11	RES,CHIP	47K	5%	1/16W
R355	1-216-864-11	METAL CHIP	0	5%	1/16W
R356	1-218-973-11	RES,CHIP	47K	5%	1/16W
R357	1-218-973-11	RES,CHIP	47K	5%	1/16W
R358	1-218-973-11	RES,CHIP	47K	5%	1/16W
R359	1-218-973-11	RES,CHIP	47K	5%	1/16W
R360	1-218-973-11	RES,CHIP	47K	5%	1/16W
R361	1-218-973-11	RES,CHIP	47K	5%	1/16W
R362	1-218-990-11	SHORT	0		
R363	1-218-990-11	SHORT	0		
R364	1-218-990-11	SHORT	0		
R366	1-218-973-11	RES,CHIP	47K	5%	1/16W
R367	1-218-973-11	RES,CHIP	47K	5%	1/16W
R368	1-218-990-11	SHORT	0		
R369	1-218-973-11	RES,CHIP	47K	5%	1/16W
R370	1-218-973-11	RES,CHIP	47K	5%	1/16W
R371	1-218-973-11	RES,CHIP	47K	5%	1/16W
R379	1-218-965-11	RES,CHIP	10K	5%	1/16W
R381	1-218-990-11	SHORT	0		
R382	1-218-990-11	SHORT	0		

Note 1 : Ferrite beads are mounted to the location where R280, R281, R282 are printed.
Note 2 : Capacitors are mounted to the location where R315, R317 are printed.

Ref. No.	Part No.	Description			Remarks
R383	1-218-990-11	SHORT 0			
R384	1-218-953-11	RES,CHIP	1K	5%	1/16W
R385	1-218-973-11	RES,CHIP	47K	5%	1/16W
R387	1-218-973-11	RES,CHIP	47K	5%	1/16W
R390	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (Note)
R391	1-218-990-11	SHORT 0			
R392	1-218-990-11	SHORT 0			
R393	1-216-864-11	METAL CHIP	0	5%	1/16W
R501	1-218-989-11	RES,CHIP	1M	5%	1/16W
R502	1-218-990-11	SHORT 0			
R504	1-218-990-11	SHORT 0			
R507	1-218-990-11	SHORT 0			
R508	1-218-990-11	SHORT 0			
R509	1-218-990-11	SHORT 0			
R510	1-218-990-11	SHORT 0			
R511	1-218-990-11	SHORT 0			
R512	1-218-947-11	RES,CHIP	330	5%	1/16W
R513	1-218-951-11	RES,CHIP	680	5%	1/16W
R514	1-218-953-11	RES,CHIP	1K	5%	1/16W
R515	1-218-990-11	SHORT 0			
R516	1-218-990-11	SHORT 0			
R517	1-218-941-11	RES,CHIP	100	5%	1/16W
R518	1-218-977-11	RES,CHIP	100K	5%	1/16W
R519	1-218-990-11	SHORT 0			
R607	1-218-990-11	SHORT 0			
R609	1-218-985-11	RES,CHIP	470K	5%	1/16W
R610	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R611	1-218-953-11	RES,CHIP	1K	5%	1/16W
R612	1-218-953-11	RES,CHIP	1K	5%	1/16W
R613	1-218-977-11	RES,CHIP	100K	5%	1/16W
R614	1-218-985-11	RES,CHIP	470K	5%	1/16W
R615	1-218-985-11	RES,CHIP	470K	5%	1/16W
R616	1-218-977-11	RES,CHIP	100K	5%	1/16W
R617	1-218-977-11	RES,CHIP	100K	5%	1/16W
R618	1-218-985-11	RES,CHIP	470K	5%	1/16W
R619	1-218-977-11	RES,CHIP	100K	5%	1/16W
R620	1-218-977-11	RES,CHIP	100K	5%	1/16W
R621	1-218-977-11	RES,CHIP	100K	5%	1/16W
R622	1-218-965-11	RES,CHIP	10K	5%	1/16W
R624	1-218-953-11	RES,CHIP	1K	5%	1/16W
R625	1-218-990-11	SHORT 0			
R626	1-218-973-11	RES,CHIP	47K	5%	1/16W
R627	1-218-985-11	RES,CHIP	470K	5%	1/16W
R628	1-218-985-11	RES,CHIP	470K	5%	1/16W
R629	1-218-990-11	SHORT 0			
R630	1-218-989-11	RES,CHIP	1M	5%	1/16W
R632	1-218-990-11	SHORT 0			
R637	1-218-985-11	RES,CHIP	470K	5%	1/16W
R639	1-218-985-11	RES,CHIP	470K	5%	1/16W
R641	1-218-965-11	RES,CHIP	10K	5%	1/16W
R642	1-218-953-11	RES,CHIP	1K	5%	1/16W
R643	1-218-929-11	RES,CHIP	10	5%	1/16W
R644	1-218-965-11	RES,CHIP	10K	5%	1/16W
R645	1-218-953-11	RES,CHIP	1K	5%	1/16W
R646	1-218-965-11	RES,CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R647	1-218-953-11	RES,CHIP	1K	5%	1/16W
R648	1-218-989-11	RES,CHIP	1M	5%	1/16W
R649	1-218-990-11	SHORT 0			
R652	1-218-990-11	SHORT 0			
R653	1-218-977-11	RES,CHIP	100K	5%	1/16W
R654	1-208-947-11	RES,CHIP	330K	0.50%	1/16W
R656	1-218-989-11	RES,CHIP	1M	0.50%	1/16W
R657	1-218-990-11	SHORT 0			
R658	1-218-990-11	SHORT 0			
R661	1-218-965-11	RES,CHIP	10K	5%	1/16W
R662	1-218-965-11	RES,CHIP	10K	5%	1/16W
R663	1-218-946-11	RES,CHIP	270	5%	1/16W
R667	1-218-977-11	RES,CHIP	100K	5%	1/16W
R668	1-218-985-11	RES,CHIP	470K	5%	1/16W
R669	1-218-977-11	RES,CHIP	100K	5%	1/16W
R673	1-218-953-11	RES,CHIP	1K	5%	1/16W
R674	1-218-985-11	RES,CHIP	470K	5%	1/16W
R678	1-218-973-11	RES,CHIP	47K	5%	1/16W
R679	1-218-990-11	SHORT 0			
R701	1-218-958-11	RES,CHIP	2.7K	5%	1/16W
R702	1-218-958-11	RES,CHIP	2.7K	5%	1/16W
R703	1-218-973-11	RES,CHIP	47K	5%	1/16W
R705	1-218-960-11	RES,CHIP	3.9K	5%	1/16W
R706	1-218-949-11	RES,CHIP	470	5%	1/16W
R707	1-218-973-11	RES,CHIP	47K	5%	1/16W
R708	1-218-973-11	RES,CHIP	47K	5%	1/16W
R709	1-218-973-11	RES,CHIP	47K	5%	1/16W
R712	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R713	1-218-977-11	RES,CHIP	100K	5%	1/16W
R714	1-218-975-11	RES,CHIP	68K	5%	1/16W
R715	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R716	1-218-968-11	RES,CHIP	18K	5%	1/16W
R717	1-218-969-11	RES,CHIP	22K	5%	1/16W
R718	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R719	1-218-973-11	RES,CHIP	47K	5%	1/16W
R721	1-218-949-11	RES,CHIP	470	5%	1/16W
R722	1-218-953-11	RES,CHIP	1K	5%	1/16W
R723	1-218-990-11	SHORT 0			
R801	1-218-990-11	SHORT 0			
R804	1-218-969-11	RES,CHIP	22K	5%	1/16W
R805	1-218-966-11	RES,CHIP	12K	5%	1/16W
R806	1-218-973-11	RES,CHIP	47K	5%	1/16W
R812	1-218-977-11	RES,CHIP	100K	5%	1/16W
R817	1-218-965-11	RES,CHIP	10K	5%	1/16W
R821	1-218-990-11	SHORT 0			
R822	1-218-972-11	RES,CHIP	39K	5%	1/16W
R823	1-218-966-11	RES,CHIP	12K	5%	1/16W
R824	1-218-980-11	RES,CHIP	180K	5%	1/16W
R827	1-218-967-11	RES,CHIP	15K	5%	1/16W
R828	1-218-971-11	RES,CHIP	33K	5%	1/16W
R829	1-218-961-11	RES,CHIP	4.7K	5%	1/16W (F55)
R905	1-218-987-11	RES,CHIP	680K	5%	1/16W
R908	1-218-978-11	RES,CHIP	120K	5%	1/16W
R912	1-218-977-11	RES,CHIP	100K	5%	1/16W
R913	1-218-965-11	RES,CHIP	10K	5%	1/16W

Note : Capacitor is mounted to the location where R390 is printed.

Ref. No.	Part No.	Description			Remarks
R914	1-218-989-11	RES,CHIP	1M	5%	1/16W
R915	1-218-989-11	RES,CHIP	1M	5%	1/16W
R916	1-218-969-11	RES,CHIP	22K	5%	1/16W
R918	1-218-975-11	RES,CHIP	68K	5%	1/16W
R920	1-208-931-11	RES,CHIP	68K	0.50%	1/16W
R921	1-218-975-11	RES,CHIP	68K	5%	1/16W
R922	1-216-841-11	METAL CHIP	47K	5%	1/16W
R924	1-208-719-11	RES,CHIP	33K	0.50%	1/16W
R926	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R929	1-218-977-11	RES,CHIP	100K	5%	1/16W
R930	1-218-971-11	RES,CHIP	33K	5%	1/16W
R932	1-218-977-11	RES,CHIP	100K	5%	1/16W
R933	1-218-977-11	RES,CHIP	100K	5%	1/16W
R934	1-218-990-11	SHORT	0		
R935	1-218-990-11	SHORT	0		
R938	1-218-977-11	RES,CHIP	100K	5%	1/16W
R939	1-218-971-11	RES,CHIP	33K	5%	1/16W
R940	1-218-990-11	SHORT	0		
R941	1-208-719-11	RES,CHIP	33K	0.50%	1/16W
R942	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R943	1-208-719-11	RES,CHIP	33K	0.50%	1/16W
R944	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R967	1-218-937-11	RES,CHIP	47	5%	1/16W
R968	1-218-937-11	RES,CHIP	47	5%	1/16W
R969	1-218-937-11	RES,CHIP	47	5%	1/16W
R978	1-218-973-11	RES,CHIP	47K	5%	1/16W
R979	1-218-973-11	RES,CHIP	47K	5%	1/16W
R980	1-208-931-11	RES,CHIP	68K	0.50%	1/16W
R981	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
		< VIBRATOR >			
X151	1-781-412-21	OSCILLATOR, CRYSTAL (24.54MHz)(F55)			
X151	1-781-411-21	OSCILLATOR, CRYSTAL (24.375MHz)(F55E)			
X351	1-781-413-21	VIBRATOR, CRYSTAL (12.9MHz)			
X501	1-781-160-21	VIBRATOR, CERAMIC (16.384MHz)			
X601	1-767-980-21	VIBRATOR, CERAMIC (20MHz)			
X602	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)			
	A-7074-055-A	VL-27 BOARD, COMPLETE (F55)			
		**********			
	A-7074-059-A	VL-27 BOARD, COMPLETE (F55E)			
		**********			
		(Ref.No.:2000 Series)			
		< BATTERY >			
* BT691	1-528-900-11	BATTERY, LITHIUM SECONDARY			
		< CONNECTOR >			
* CN691	1-770-619-11	PIN, CONNECTOR 2P			
		< RESISTOR >			
R691	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS	
		**********	
2	1-959-605-11	HARNESS (SV-110)	
3	1-959-606-11	HARNESS (SS-72)	
8	1-673-451-21	FP-109 FLEXIBLE BOARD	
14	1-959-947-11	HARNESS (DC-67)	
⚠109	1-418-340-11	FLASH UNIT	
110	1-673-450-11	FP-108 FLEXIBLE BOARD	
112	1-673-449-11	FP-107 FLEXIBLE BOARD	
113	1-500-226-11	BEAD, FERRITE	
115	1-758-319-21	FILTER BLOCK, OPTICAL	
151	1-673-452-21	FP-110 FLEXIBLE BOARD	
⚠154	1-418-237-12	TRANSFORMER UNIT, INVERTER	
155	1-959-604-12	HARNESS (DB-51)	
158	1-418-338-11	SWITCH BLOCK, CONTROL (HF)	
161	1-418-339-11	SWITCH BLOCK, CONTROL (MS)	
BT901	1-694-531-11	TERMINAL BOARD, BATTERY	
IC102	A-7030-987-A	CCD BLOCK ASSY (CCD IMAGER)	
LCD901	1-803-549-21	MODULE, CRYSTAL INDICATION	
MIC901	1-542-394-11	MICROPHONE UNIT	
⚠ND901	1-517-878-11	TUBE, FLUORESCENT,COLD CATHODE	
SP901	1-505-862-11	SPEAKER (2.0 CM)	
		ACCESSORIES	
		**********	
⚠	1-475-851-22	ADAPTOR, AC(F55:US,CND)	
⚠	1-475-851-33	ADAPTOR, AC(F55:E,JE/F55E)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P(F55:E/F55E:E)	
⚠	1-573-856-11	ADAPTOR, CHANGE 2P(F55:JE)	
⚠	1-769-608-21	CORD,POWER(F55:E/F55E:AEP,UK,E,HK)	
⚠	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (F55E:HK,UK)	
	1-772-118-11	COMPACT DISK	
	1-782-984-21	CABLE, DIGITAL STILL CAMERA(DOS/V)(1.5m)	
	1-783-738-31	CORD, CONNECTION (AV)(1.5m)	
	1-783-739-22	CORD, CONNECTION (DK-115)(1.6m)	
⚠	1-790-107-22	CORD, POWER(F55:US,CND)	
	3-050-664-11	STRAP, HAND	
	3-866-309-11	MANUAL, INSTRUCTION(ENGLISH/SPANISH)	
	3-866-309-21	MANUAL, INSTRUCTION(GERMAN/FRENCH) (F55:CND,JE/F55E:AEP)	
	3-866-309-31	MANUAL, INSTRUCTION(ITALIAN/DUTCH) (F55E:AEP)	
	3-866-309-41	MANUAL, INSTRUCTION (PORTUGUESE/RUSSIAN)(F55E:AEP)	
	3-866-309-51	MANUAL, INSTRUCTION (TRADITIONAL CHINESE)(F55:E,JE/F55E:E,HK,CN)	
	3-866-309-61	MANUAL, INSTRUCTION(ARABIC/KOREAN) (F55:E,JE/F55E:E,HK,CN)	
	3-866-309-71	MANUAL, INSTRUCTION(SWEDISH)(F55E:AEP)	
	3-866-543-11	MANUAL, INSTRUCTION(SPANISH)(F55)	

Be sure to read "Precautions upon replacing CCD imager" on page 4-6 when changing the CCD imager.

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

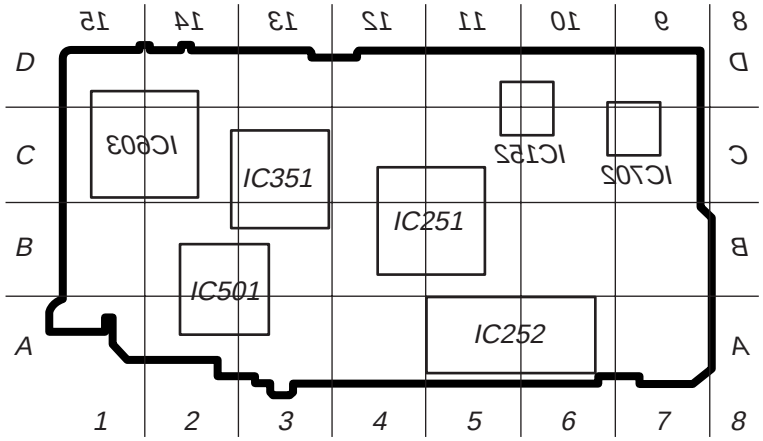
Ref. No.	Part No.	Description	Remarks
	3-866-543-21	MANUAL, INSTRUCTION(FRENCH)(F55:CND)	
	3-866-543-31	MANUAL, INSTRUCTION (TRADITIONAL CHINESE)(F55:E)	
	3-866-543-41	MANUAL, INSTRUCTION(KOREAN)(F55:E)	
	3-866-544-11	MANUAL, INSTRUCTION(ENGLISH,RUSSIAN)	(F55E)
	3-866-544-21	MANUAL, INSTRUCTION(GERMAN,FRENCH)	(F55E:E,HK,AEP,CN)
	3-866-544-31	MANUAL, INSTRUCTION(ITALIAN,DUTCH)	(F55E:AEP)
	3-866-544-41	MANUAL, INSTRUCTION (SPANISH,PORTUGUESE)(F55E:AEP,E,HK)	
	3-866-544-61	MANUAL, INSTRUCTION(ARABIC,PERSIAN)	(F55E:E,CN)
	3-866-544-71	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE)(F55E:CN)	
⚠	A-7033-586-A	CORD ASSY(A), POWER(F55:JE)	
⚠	A-7033-588-A	CORD ASSY(C), POWER(F55E:AUS)	
⚠	A-7033-589-A	CORD ASSY(D), POWER(F55E:CN)	
	X-3949-596-1	CAP ASSY, LENS	
	X-3949-706-1	STRAP ASSY, LENS CAP	

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

〈PARTS REFERENCE SHEET〉

You can find the parts position of location of mount locations applying to SY-54 board of a set.

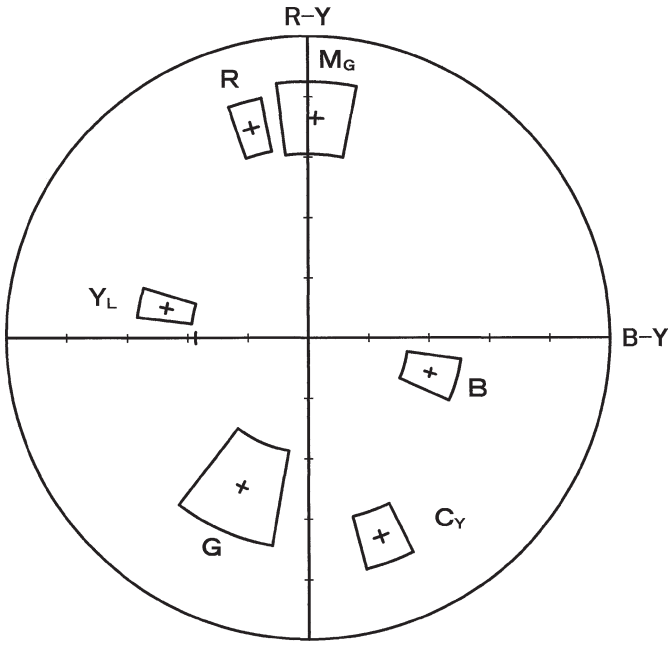
SY-54 DSC-F55/F55E SIDE A



SIDE B DSC-F55/F55E **SY-54**

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

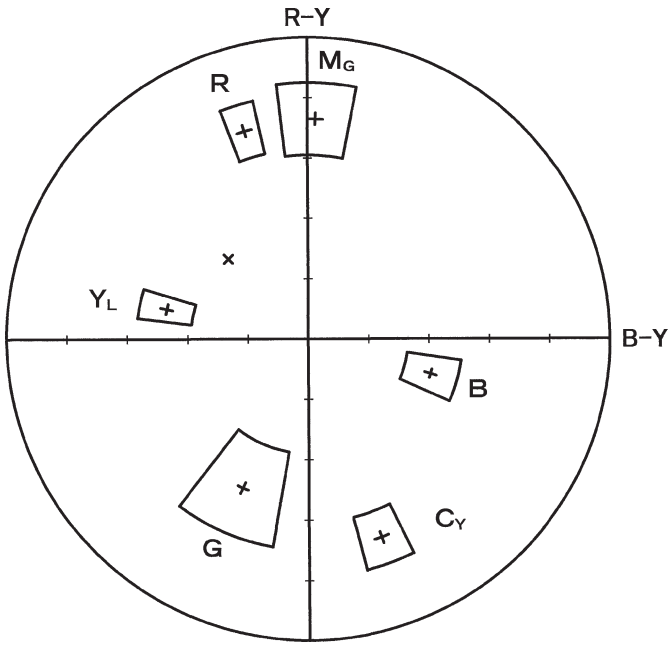
For NTSC model



DSC-F55

Take a copy of CAMERA COLOR REPRODUCTION FRAME and Parts referencesheets with a clear sheet for use.

For PAL model



DSC-F55E

9-974-166-11

Sony Corporation
Personal VIDEO Products Company

99D1634-1
Printed in Japan ©1999.4
Published by Safety & Service Engineering Dept.